

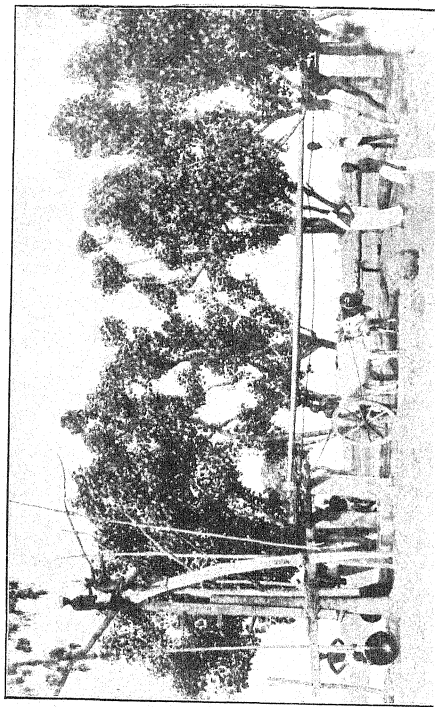
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GROUNDWORK OF ECONOMICS

BY

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PREFACE

THE increasing interest in the study of economics and its bearings upon national welfare shows the need of popularising the subject, and calls for a suitable text-book adapted to prepare Indian students for the degree courses. This book is intended to meet this need, and its scope and method are determined accordingly. Economic life has to be viewed, especially in India, as intimately bound up with a wider social life, and with its framework of time-honoured institutions and modes of living. Thus the current concepts and topics of economics have been necessarily presented in a form in which they will be readily comprehensible to Indian youths. There is a dearth of books on economics written from the Indian viewpoint and drawing its conclusions from the facts and conditions of Indian life. Thus, agriculture and the village, which play so important a part in Indian economic life, receive in this book more attention as compared with industrial society and urban life, on which the usual textbooks by Western writers naturally lay particular stress. Similarly, the special dangers from the coming industrialisation of India and the menace of its accompanying social disturbance need careful study. The peculiar conditions affecting Indian labour, both agricultural and industrial, and the problems of small production and small farming, the decay of which has made the old communal life difficult, also call for special examination. Thus, the way is indicated towards an Indian solution of some of those ills of industrialism which are certain to be encountered in the near future in this country. The

reorganisation of peasant farming on the bases of appropriate land settlement, intensive scientific cultivation, and co-operation ; the revival of small industries, and the attainment of an economic balance between rural and urban interests, demand particular notice in the new ordering of industrialism in India.

Thus, the book includes much new material which is usually omitted ; it investigates certain problems and topics of economics which are special to the " region," and applies certain new methods of treatment. This is as necessary in the interest of theoretical as in that of applied economics ; for economics, to be constructive and fruitful, must relate itself to social inheritance.

CONTENTS

CHAPTER	PAGE
I. BEGINNINGS OF ECONOMY - - -	I
II. INCENTIVES TO WORK - - -	10
III. EMPLOYMENT OF CAPITAL - - -	17
IV. DIVISION OF LABOUR - - -	26
<i>Notes.</i> —Occupations of Primitive Women. Social Etiquette and the Occupations of Indian Women. The Social and Economic Status of the Chamars	
V. BASIS OF PROSPERITY - - -	35
<i>Notes.</i> —The Influences of Geographic Environ- ment. Map of Climatic Energy. Ideal Distribution of Vegetation and Civilisation on a Simplified Globe. Effects of Rice Culture on Civilisation	
VI. WELFARE - - -	44
<i>Notes.</i> —Indices of Progress. Types of Exploi- tation	
✓ VII. ECONOMICAL USE OF LAND - -	55
<i>Notes.</i> —Utilisation of Energy. Relation of Man to the Soil	
VIII. PROBLEM OF FOOD - - -	59
<i>Notes.</i> —The Essentials of Good Diet. Excess of Rice Consumption. Percentage of Food Expenditure among Skilled Factory Labour- ers. Cooked and Steamed Rice	
✓ IX. PROPERTY AND THE VILLAGE COM- MUNITY - - -	68
<i>Notes.</i> —Property and the Stages of Economic Development. <u>Irrigation and Property</u>	
X. SHARES IN THE AGRICULTURAL INCOME	76
<i>Notes.</i> —The Abuses of <i>Batai</i> . The Relation between the Growth of Population and Agriculture in India	
XI. BALANCE-SHEET FOR CULTIVATORS -	86
<i>Note.</i> —Agricultural Indebtedness	

viii GROUNDWORK OF ECONOMICS

CHAPTER	PAGE
XII. RISE OF "BIG BUSINESS" - - -	94
<i>Note.</i> —Factories in India	
XIII. PRICES AND WAGES - - -	106
XIV. THE UNECONOMICAL HOLDING - - -	117
<i>Note.</i> —Food-producing Powers of an Acre of Land under Different Crops	
✓ XV. AGRICULTURAL LABOUR - - -	135
<i>Note.</i> —The Serfs of South India	
✓ XVI. DISTRIBUTION OF POPULATION - - -	149
<i>Note.</i> —Genius and the Countryside	
✓ XVII. RURAL RECONSTRUCTION - - -	155
<i>Note.</i> —The Isolation of the Villager	
✓ XVIII. LABOUR PROBLEMS - - -	174
✓ XIX. LINES OF ECONOMIC DEVELOPMENT - - -	192
INDEX - - -	209

LIST OF ILLUSTRATIONS

IRRIGATION IN THE SOUTH, OLD AND NEW	<i>Frontispiece</i>
MAKING FIRE BY FRICTION IN MIRZAPUR - - -	17
THE RUDE BEGINNING OF ARTS—MELTING IRON FROM CLOUDS OF EARTH - - -	17
CAMEL TRANSPORT - - -	32
GRAIN ON THE THRESHING FLOOR ON THE VILLAGE COMMON, SOUTH INDIA - - -	76
A GUILD HALL AND TEMPLE IN THE SOUTH - - -	149
CAWNPORE SLUMS - - -	149
HAND-SPINNING IN KASHMIR - - -	156
WHERE THE MACHINE SUPERSEDES HUMAN LABOUR	177
A REHABILITATED HANDICRAFT: CLAY MODELLING IN LUCKNOW - - -	192

GROUNDWORK OF ECONOMICS

CHAPTER I

BEGINNINGS OF ECONOMY

Society before Man.—Man did not make society. It was society which made man ; and society existed for thousands of years before man was born. We find social life in the most varied forms in insects, birds, and mammals. In middle grade and even lower grade monkeys social life assumes rather human-like features. Family life and even a sort of stable sex relation, as well as association in procuring food and shelter, are to be found among certain classes of apes. It is well known that the anthropoids are only our cousins and that we must seek our direct ancestors in very much lower monkeys. All these lower monkeys live in hordes ; and how they club together to rob plantations, at the same time setting some of their number on watch, and how they perform other tasks such as removing heavy stones, to get at the maggots beneath, are matters of common knowledge. Brehm describes how baboons and other monkeys act in thorough concert in plundering expeditions, sending scouts, posting sentinels and even forming a long chain for the transport of the spoil. Pelicans fish together in great companies, forming a wide half-circle facing the shore and catching the fish thus enclosed. Wolves organise hunting bands, and ants engage in marauding on a

large scale. Many animals thus exhibit co-operation for attack or defence in procuring sustenance. They grow or build homes such as the shell of the snail, the lair of the animal or the nest of the bird. They show also a sagacious provision for the future. Squirrels store food for the winter. Dogs and wolves hide food they cannot immediately devour. Monkeys and birds sometimes hoard things of no specific value to them. Apart from laying up provisions, claiming ownership of a certain ascertained territory or a natural or artificial nest or dwelling for safe retreat, common amongst animals, it is the instinct shown in the hoarding of things of no special use which attests the close relationship between man and the rest of the animal kingdom.

Socially-performed Work of Ants and Beavers.—Extensive transformations are sometimes made of the environment by village-building termites and dam-building beavers. The termites work even on the top of high trees. Professor Drummond describes how the termites take up some of the ground with them to the tree top. They construct tunnels which run from beneath the soil up the sides of trees and posts : grain after grain is carried from beneath and mortared with a sticky secretion into a reddish, sandpaper-like tube. This is rapidly extended to a great height—even of thirty feet from the ground—till some dead branch is reached. Many trees in a forest are thus plastered with tunnels. There are besides elaborate subterranean galleries and huge obelisk-like ant-hills, sometimes ten to fifteen feet high. Among the beavers, a family of about six members inhabits one house, and in suitable localities—secluded and rich in trees—many families congregate in a “village community.” “The beaver fells a tree and cuts it into logs ; it pushes them out into the water and builds a barricade, mortared together with mud and stones which settle into a magnificent cement. So it dams a stream and

converts it into a lake, with sluices to permit the escape of floods. It builds its dam in the form of a bow with the arch upstream when the current is dangerously swift. When riverside timber fails, the beaver goes inland and fells more trees there, constructing canals to ferry its logs down to the stream; and when these streams are dry it builds catchment basins in which rain and drainage supplies collect, and so convert dry channels into canals again." Professor Thomson thus observes the ingenuity shown by the beaver community: "Make allowances for the exaggeration of the enthusiastic observers, but read Mr. Morgan's stories of the evolution of a broken burrow into a comfortable lodge, varying according to the local conditions; of the adaptation of the dams against the rush of floods, of canals a hundred feet in length—labours without reward until they are finished; of the short-cut waterways across loops of the river and of 'locks' where continuous canals are, from the nature of the ground, impossible." Still more extensive and more important transformation of the environment is the network of paths and trails worn through the forest, and over *mesa* and plain, by migrating bands of gregarious animals. Marmots and prairie-dogs, living in "cities," alter the character of the region. Natural conditions also fix channels in which the stream of gregarious animals or humanity most easily move in successive epochs.

Functional Differentiation among Animals.—Very early in the history of animals there must have begun a differentiation of arts of being. There are hunters and fishers—beasts of prey of all kinds—pursuing the chase with diverse degree of wit; shepherds, too, for some ants feed aphides which they milk; and farmers, without doubt, if we use the word in a sense wide enough to include those who collect, modify, and store the various fruits of the earth. In all these we find the simple beginnings of economic life in much the

same way as we find them in the history of the human race. Corresponding to the hunting savages we have animals who are hunters by open profession, notably the carnivorous birds and mammals. The carnivores do not live together. These, however, have become few, are becoming extinct; while the peaceful and social types of animals have increased to ever greater numbers of individuals and to advancing social organisation. On the other hand, the distribution of food supply is for every species an important factor in determining the extent to which their life is to be social. Species, where food is scanty, are forced to live more or less solitary lives. Predatory animals also, such as the mammals, birds and insects of prey, are likely to be solitary on account of their habits, because hunting can usually be carried on best alone. Vegetarian species are likely to be social because their food is usually abundant and is more or less concentrated in places where conditions are favourable for its growth.

Primary Economic Functions of Insects and Animals :

(1) **Utilisation.**—In the “industries” of insects and animals connected with procuring food and building home, we come across the primary economic functions. The storing activities of insects and animals are exhibited in varied degrees of elaboration. As among men, so among animals, we find all grades, from those that do not store at all to those that make a fine art of it. There is a careful discrimination of materials among the shell- and nest-builders. Among the tube-building worms, the tailor crabs, the hive-bees, the trap-door and web-spinning spiders and so on up to nest-building birds we see individual, specific, effective, adaptive, and beautiful utilisation of material and often a remarkable triumph over the difficulties which they involve. Indeed, in this kind of economic achievement, the observer is often tempted to declare that the advantage is in favour of animals rather than

in that of the lowest savages such as the Negritos or Mincopis.

We thus find in animals the germs of the tradition of utilisation. It grows out of the relations of superiors to vegetable or inorganic inferiors that are appropriated and enjoyed by the superiors or are pressed into their service.

(2) *Species Knowledge*.—Secondly, there is the "species knowledge" of such things as weapons, tools, materials of nesting labour, co-operation and methods of producing and using objective utilities. The discoveries made by primitive man were few and did not get beyond the simplest tools and processes, but these became a common possession and were communicated from mind to mind and from hand to hand. Under the influence of association, man gradually perceived the relation between utility and effort, and the difference in kinds of satisfaction; while under the spur of curiosity, which was itself the product of a higher mental evolution, he continuously discovered new wants and new devices and activities for their satisfaction and all these became the permanent economic ideas of the group mind.

(3) *Homing and Migration*.—Thirdly, there is among many creatures such as ants, hive-bees or nesting-birds a visual knowledge of the district in which they live, by which they utilise various kinds of imprints or memories in finding their way or bringing their food home; and a working idea of time, which originates in the periodic effects of the seasons on sex and food, and the experience of their satisfaction in countless seasonal succession. A most characteristic habit is the migration of birds, which is usually social and is probably sometimes facilitated by social tradition. The long distances which some migratory birds travel periodically over land and sea in search of food have never been outstripped by the wanderings of the primitive peoples in the early dawn of civilisa-

tion. For the departure of many birds on the approach of winter we can perhaps see good reasons, observes Thomson, probably not so much in mere cold itself, but in the decrease in food supply, in the freezing of ground and water, and in the shortened hours of daylight. In the return from the south in the spring we may see an expression of a need for expansion during the breeding season—to obtain more room, abundance of nesting sites and fresh sources of food supply. The primitive man had his *wanderlust*, but, since his locomotion was slow, migration meant the output of a much larger amount of energy, the facing of risks of conflict and a much heavier mortality. Thus the expensive habit was gradually given up, though it still persists in sparsely settled forests and wildernesses which are the abode of hunters and shepherds. Habits of saving and storing long ago had been acquired in the life of the lowest animal communities, but under the fostering of association they became a social tradition faithfully to be cherished. Similarly, the idea of possession which originates in the instinctive assertion of ownership exhibited by animals becomes transformed into the notion of property or private rights, while the idea of tools, materials and processes is fashioned by the social mind into the notion of capital or of production for individual or social use that derives its assent or sanction from the community. The transformation has been gradual but inevitable on account of an increasing pressure of population upon resources. Habits of toleration also had been established in animal groups and are further developed by division of labour and mutual sympathy, and these become rules and standards of morality, thought about and prized, which circumscribe competition on the merely animal plane and govern economic and social intercourse of men. Mutual aid and interdependence, ownership and obligation, a careful husbandry of

resources or a wise anticipation of future needs have varied according to the stages or types of economic development, but the economic ideas always reflect the characteristic phase of evolution of the social mind.

(4) **Social Control.**—Lastly, animal societies exhibit relations of control and obedience in which lie the germs of stratification in human society. The blood-red ant, a gifted belligerent creature, usually makes slaves of the workers of other species, but can thrive well without them if it chooses. Very different from these militarist aristocrats, as they may be called, are the degenerate slave-holders and social parasites, which are altogether dependent on their slaves or hosts. But between the degenerate forms which have surrendered independence for ease, and the sanguinaries which can be independent if they will, are the Amazon ants. They cannot live without slaves, and yet they have not so far become in any marked way degenerate. Notions of a common leadership and allegiance were acquired in the animal stages of evolution and were developed by a discovery that the group at any moment might need the active services of all its members in the acquisition of food, in attack and defence, or in some other form of mutual aid. Animals display admiration for unusual power or brilliancy and in return for deference expect various benefits from the superior. Herein lie the germs of the notions of inequality and of benefit and obligation in the relations of leader and follower. There is a great reliance on leaders in the cases of wolves in their expeditions, of birds in their migrations, and of many hoofed animals, such as deer, antelopes, goats, and elephants, as well as of marmots, parrots and cranes who strive and move in herds and flocks. They post sentries or send scouts and have definite conventions. Galton long ago observed that the tameest cattle, those that seldom ran away, that kept the flock together, and

those which led them homeward, lived longer than the irreclaimably wild members of the flock. But it is the social life of ants and bees which is marked most by the differentiation of classes, such as queens, drones, and workers. Animal societies have also criminal members. Robber bees and robber wasps are not tolerated at all. A hungry or famished ant gets the half-swallowed food from another ant, and this violation of convention is met with punishment. The food secured by any one of social animals which hunt in packs is often shared with the other members, while an unsocial animal would be driven from the feast. They have also their pauper individuals which follow the band in its food quests and live on the fragments of the food that the stronger majority procure; but, unlike human societies, they have no pauper class, because surplus food is too inadequate in amount and the conditions of life in general are too severe for pauper endurance; they have no criminal class because criminal individuals are expelled or put to death. The ruthless extermination of anti-social members is especially characteristic of the ant colonies and bee-hives.

Economic Life of Animals Leads up to that of Man.—
We thus find many economic habits common to animals and to men. In habits of hunting and migration, in the arts of storing, nest-building and dam-building in particular, we find that economic relationships are established and beginnings have been made in the specialisation of labour and the employment of capital. These social acquisitions played no small part in the differentiation and survival of animal types, giving the animal community equipped with habits of mutual aid and with elementary forms of economic organisation not merely superior nutrition and a relative security but also increased mental power. Economic life attains its highest development in the animal kingdom among the social apes and

monkeys. Co-operation must have been further developed among primitive men in caves and forests and the beginnings of shepherding, agriculture and industries are laid in the early collective struggle of hordes with land and water. It was thus that ages before man was born the economic life of animals paved the way for man and for his industries.

CHAPTER II

INCENTIVES TO WORK

Food-getting a Social Bond of Species.—[The rudiments of economic phenomena and even of economic laws which govern human societies are to be found in animal life. This is not to be wondered at, because human and animal societies have been the result of the same life process.] In the course of evolution the activities connected with food-getting have bound together insects and animals of the same species. Where there is an abundant and stable food supply, large numbers of the same species live in close proximity to one another and develop both physiological and social inter-relations. Many writers have described the marvels of mutual aid and specialisation in ants and bees, who have been accustomed for ages to live in industrial communities. The ants show a more careful, elaborate and sagacious provision for the future than does any other group of animals, excepting some of the highest races of mankind. They clear roads, rear nests, dig tunnels, make bricks and plaster, and construct doors. They convey food, build granaries or other store-houses, dry grain and nibble the radicle in grains that are to be stored. They cultivate fungi, store honey, make holding places, keep and feed aphides in order that they may be milked, provide for the maturation and flight of queens, and show great tenderness and care for the young through successive stages of growth.

Co-operative Economy of Ants and Bees.—In the ant-nest or bee-hive the laws of co-operation are

implicitly obeyed, as if they were proclaimed intelligently to all. It is a nicely adjusted economy, built up in thousands of years, in which a strike of any of the members will lead to the ruin of the whole fabric. Each member plays a special part in the life of the community, serving other individuals in return for their service. Here we find an elaborate division of labour which has resulted in specialisation of organs. Both among the social bees and the ants distinct types of "castes" have been evolved as the visible result of division of labour, such as the fertile queen, the reproducing males and the sexless individuals whose tasks are nest-building, foraging and nursing so that the species may live.

Man, a Conventional Animal.—In social insects and animals, labour partakes of the nature of social service, of which they may not be conscious, and there appears to be little aversion from work. Man has often asked whether his own labour cannot be made into a form of natural, joyous activity. There is no suffering in work itself, for man, as well as the animal, must and does work. But it is far from true that man, as well as the animal, acts in order to live, or, in the language of economics, produces in order to consume. The motives of a very large part of consumption are social in their nature. Even when man desires food, clothing, shelter, etc., he desires them in conventional kinds and amounts. Thus, much of the hardship due to low wages is due to the compulsory deviation from the group standard. It is true that human interests have evolved out of animal desires and are ultimately continuous with them. But man's mental and social evolution has reversed the relation of wants to activities: so that it is not mere *life* that the civilised man strives for but *social life*, which is a conventional cultural concept. Thus, a purely biological interpretation of work does not apply to man. The complex social organisation which man has evolved creates

habits and feelings which are socially beneficial, and when these conflict with physical needs man rather typically chooses the former. Indeed, man might have similar physical wants with animals, but it is society which has determined for him the *particular* mode of their gratification, so that the form now dominates the substance. Again, man's success as an animal is due not merely to his sociality but also to his tool-bearing and tool-changing capacity. Man's workmanship and constructiveness have been important aids to social survival, and exhibit another disparity between human and animal methods of development.

Human Incentives to Work.—The truth is, that, for any practical social purpose, conventionality, beauty, constructiveness are more "necessary" to man than food and shelter. And, if these do not find satisfaction, man develops maladjustment, balked disposition, and unhappiness. Now, in modern industrial society, work for the great majority of population becomes irksome because of the particular conditions under which it is demanded. Thus, the evil of work to the modern labourer is not only that he has to work for so long for so little, but also that he may have to strain his powers at work for which he is not fit, submit to rule that is humiliating, and in general be thwarted in the fundamental impulses of his nature. Modern psychologists tell us that if we leave unstimulated any one of our main dispositions, we produce in ourselves a state of nervous strain. Among these main dispositions psychologists have recognised as most important the instinct of workmanship. Evidence of this instinct is seen in the home-building propensities of animals, birds and primitive men, and in the crude drawings and mud pies of children which embody the germs of art and craftsmanship. The constructive impulse was called into activity in man especially in the making of weapons and tools, and became an

absorbing passion ; so that a savage (often accused of being incapable of prolonged attention !) will sit for days working at a spear or an axe. It is more probable that repairing and making spears, etc., were the work of women. The primitive women who remained at their ease while the men went out for the chase were the first to make tentatives towards acts which may be regarded as originating art and industry. Most of the primitive industrial inventions were probably made by women, in whom the instinct of workmanship early developed in greater strength. But the invention of tools and implements has been accompanied by the thwarting of the instinct of workmanship ; and the present age of machine production, which has been ushered in by discoveries attesting the highest constructive skill man has yet shown, has proved most inimical to his freedom.

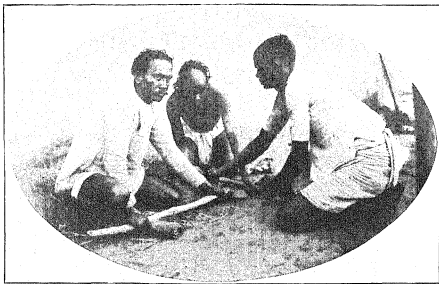
H Human Instincts Thwarted by Modern Industrial Conditions.—There cannot be any doubt that in modern times the grind of work furnishes the instincts, which therefore find outlet either in the craving for sports, recreation and gambling, or in organic excesses, drink or vice. The great problem of labour in the modern age is thus the industrial system's thwarting of the instinct of workmanship, which if appealed to would realise many ideals now deemed unattainable. Higher wages and more leisure will mitigate but will not solve the problem. They might increase energy and incentive and lessen anxiety, but they cannot check unsocial ideas at work in the minds of workers whose tenure of employment is insecure and who have no sense of ownership in the things created under the present industrial conditions. The solution will lie in a reconciliation of the claims of individual constructiveness and those of efficiency in mass-production, with its discipline, its monotony, its meaninglessness of one minute fragment of a task and its speeding up of work—features which all militate against the normal

creative impulse.¹ Profit-sharing and the control and management of industry by the labourers themselves might lessen the burden to some extent, but the machine-tender's life would still remain more irksome than ever before it has been for free workers. The hunter who exerts his skill in capturing the game, the shepherd who tends the flocks, the peasant whose work is adapted to the varying needs of the seasons, and the artisan who makes his own handiwork, have each some joy and interest in labour, though to a decreasing extent in the successive types; but no colour, no creative zest and novelty are left for the factory-hand. As did the slave and the serf who toiled for others, the wage-earner in modern times regards labour as a curse. The truth is that, unless the modern industrial world can offer free play for the normal creative impulses, it shows weakness at a vital point. Man is not by nature lazy or improvident, but is made so by abnormal conditions. Here we find civilisation taking a long and painful march in a reverse direction from animal life, where work is a simple, natural function. "In the sweat of thy brow shalt thou labour" can never be said of animals who live in communities as opposed to the intolerant carnivores, who in the fashion of modern men have tried to brush aside the tendencies of co-operation found in Nature. Nor can it also be said of animals that some would live by working and others by owning and bargaining, or that some should work that others might enjoy. Man's first tool, a stone, was a weapon; but a weapon in the struggle for food and a tool for turning up the soil. Afterwards this weapon for attacking earth and wood was used against animals and finally against man also. Man's labour and tool have been used for ends which are incompatible with similar realisation of ends by fellow-creatures. The primitive man tamed animals and utilised them by

¹ Cf. Tead: *Instincts in Industry*.

making them do what was natural to them to do. Thus, the ox pulled and the horse ran for him, the dog heard and smelled for him, and the sheep protected him from cold. But with the discovery of fire man became the lord of creation. With his newly acquired freedom, he violated the harmony of Nature, and everywhere carried pain and grief. He produced the effect of something out of place and brought into the world exploitation and slavery, sin and war. He has now established an industrial system characterised by the struggle of one party to get the most work for the least pay, and of the other to get the most pay for the least work: a perpetual struggle which involves great waste, inefficiency, and unhappiness. Every appeal to the constructiveness and the mentality of labour is a direct asset to efficient production, and to thwart or even to neglect these is to drive them into perverse or dangerous channels. It is thus that we find everywhere these instincts prompting humanity to the creation of new methods, the contriving of new schemes and organisations, which secure the chance for satisfaction in ownership and constructive effort for the dispossessed and circumscribed. And if it should prove that, because of the high development of standardised production, workmanship cannot find adequate expression even under self-direction, man must return to less sophisticated and more normal pursuits. For man cannot outlive the error of work which ceases to be interesting and spontaneous. Animal instinct can never err, but with man error and endeavour are inseparable. Thus, endeavour has ceased to be joyous and socially beneficial at the same time, though it is not less true that endeavour is made possible by error. When man shall cease to act as a rebel, his labour shall again rise to the dignity of social service, and it will be as joyous and spontaneous as the humming of the bee or the song of the bird. The class-consciousness in which the maladjustment and

unhappiness now express themselves will be superseded by the duty of solidarity; and what is now forced from a "class" will be a spontaneous gift to society, blessing those that give and those that take.



Making fire by friction in Mirzapur.



The rude beginning of arts : melting iron from clods of earth.

CHAPTER III

EMPLOYMENT OF CAPITAL

Capital in Nature.—All living organisms store up food and energy in their cells. Where Nature is niggardly there is a specialisation of organs for the storing up of the elemental needs of life. Here we see the formation and employment of capital in its simplest form as food hoarded up for future consumption. In deserts, plants are provided with safes or store-rooms in which at favourable opportunities they lay by a certain quantity of water. The deep tap-roots, the bladders of water, the salt crystals, the ephemeral circle of roots of desert plants are the means by which they store up water without which their growth is impossible. Similarly, the water-pouch of the camel, familiarly called the "ship of the desert," is an interesting instance. In winter we find in the organic world stores of food-capital, whether inside the body in the form of fat which may be slowly burnt away in winter months, or outside the body in the form of nut-pits, seed granaries, meat larders and what not. The climax on the instinctive tack of evolution is to be found in the societary stores made by ants and bees.¹

Tools and the Property Sense in Nature and Man.—Animals and insects are endowed by Nature with the particular organs which serve as tools for the industry to which they are accustomed. This represents a more complex form of capital, as energy destined for the production of future energy. The mammals have

¹ Thomson : *Secrets of Animal Life*.

claws, the birds have beaks, and "there is no auger or saw or syringe or gimlet or needle that is not to be found in the insect world and employed in a multitude of tasks." With the aid of tools, animals adapt themselves more easily to the conditions of their environment. But man has used his tools to acquire freedom under most varied conditions. Unlike the countless tools of animals which have grown to be a part of them, such as beak, teeth, prehensile tail, proboscis, burrowing feet, etc., human tools can be laid aside or changed at any moment. The animal's tools are usually not tools from without, controlled from within; they are part and parcel of them. Often the work they do is the result of properties given off by the body itself, substances as marvellous as the organs which drive them. It is not, however, true to say that no animals can make or control tools. Some apes use the tools that are ready to hand in the form of clubs and stones. Baboons working together use their hands for raising a heavy stone to search out insects hiding beneath, and in captivity the imitative monkey even mimics its human friend in the use of certain instruments. A wasp uses a stone for its purposes, as a thrush regularly uses a pebble as an anvil on which to dash a snail. Many creatures even make traps for catching their prey. "The spider's web is neither clothes nor lodging, but a trap like the snare of the hunter or the fisherman. And there are other examples such as the hole dug by the ant-lion as a pitfall for the insects upon which it feeds." But it is left for man with his more extended use of hands and his enlarged brain capacity, which is connected with the former, to win much greater freedom by the improvement of his tools, which he can adapt to individual uses that are varied and complex. It is true that some insects are fitted with instruments whose perfection—the exquisite much in incredibly little—is the despair of human mechanics and achieves results to which man cannot

yet aspire. But man has his wonder-working hand, which is driven by his brain and which has transformed the world in a thousand ways. The use of his hand stimulated his brain; the increased activity of his brain suggested new uses for his hands. Thus the ant with a brain which is, in its way, as great a marvel as man's own, and the ape with the same equipment of tools, remain where they were; while the rodents, whose incisor teeth can work a remarkable transformation of the environment unrivalled among the higher animals, have been left far behind. [Man not only has greater control over his environment, but he can also change his environment.] This is chiefly because of man's mastery over fire, which he first obtained by the friction of wood or the striking of sparks from flint. By fire he has begun his conquest of the elements, and one of his early tasks was the defeat of darkness. But even here he was preceded by many makers of light in the animal kingdom, creatures capable of emitting light, such as sponges, jellyfish, earthworms, centipedes and fireflies. Indeed, such animals have produced the most wonderful and economical light known in the world. In some cases this light seems purely accidental, although often it is produced to serve a definite purpose, such as to scare away enemies, and, in the case of some deep-sea animals whose bodies give off lights of more than one colour, for the purpose of recognition or as a bait to attract and catch smaller creatures. By the use of numerous tools which he can use for and adapt to specific purposes, and by his mastery over fire which gave him the key to control the forces of Nature, man now conquers time and space, and thus his desires extend over long distances and across the boundaries of the present. Nicolai observes: "The tiger must fall upon his prey, and consequently inhabit a district where prey abounds, for his claws are part of himself; the mole must dig and consequently creep into the

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earth, being unable to lay aside his burrowing feet. The horse must be a fleet animal, and therefore cannot quit the steppes, for he cannot put his hoof to any purpose except running. Man, however, can exchange his sword for a ploughshare, and be both farmer and warrior at once. By making a tool of the horse, and hoisting himself on to his back, he can even appropriate his swiftness; and he can actually intensify this speed by building railways and steamers, air-ships and motor-cars. Thus he is able to live everywhere." Again, in the case of animals and insects, a new organ or an increased capacity of the organs is limited by their capacity to eat. Man, who does not discover the tools, can use them, however, for the satisfaction of his animal as well as his intellectual and moral wants. Thus he can create and utilise almost unlimited quantities of energy for spiritual instead of material life, and this has no counterpart in the animal world. On the other hand, the fact that man can control unlimited quantities of energy by this means opens the way to exploitation, though examples of the latter due to advantage of the possession and use of hoarded provision are by no means rare in the insect and animal world. Amongst animals and insects predatory raids are quite common; ants practise marauding on a large scale, while bees live upon petty larcenies committed individually at the expense of foreign hives. Similarly, if we look back upon the history of man, we find him obtaining his sustenance by robbery rather than work. Animals not only seize and share food, but also sometimes have their feeding ground, the boundaries of which are zealously defended. Indeed, the possession of a given territory by many animals and birds gives us the rudiments of the origin of property. The claim to property is instinctive in many animals—claim to a certain territory, or to a nest, or lair, or mate. Each early human pack probably claimed a certain hunting range, and each

family its lair, which it guarded, as our domestic dogs guard the house. As weapons or other implements, charms or ornaments came into use, and slaves were reared or animals domesticated, the attitude towards the territory or lair will have been extended to include them. Ants and elephants, writes a keen observer, have the property sense in common. The elephant's gods or goods are men, the ant's is a plump green-fly. The elephant will risk his life to save a *mahout*. The ant will die in defence of its aphides. This property sense, devoted in the ant to the domestication of the green-fly as milch-cows, has raised these little creatures to a pitch of economic efficiency second only to man's. The ant collects green-fly eggs, stores them for hatching, protects the young, carries them up each day to feed and bask in the sunlight, carries them down at night and milks them of the juice. Nothing that any domestic animal does for us matches the wonder of this communion of interests between the ants and their insect cows. And yet it is well known that the domestication of animals by man marks the first step of his economic advance from the stage of hunting common to primitive men and the animals.

Man's Property Sense Individualistic.—But the property sense in man has not been guided by social initiative as in the case of many of the lower insects and animals. In days of sharp alternations of feasting and starving, man learnt to prize abundance most. To possess in abundance trophies, ornaments, tools, land and money, which served as marks of distinction in successive economic stages, has been, therefore, the chief aim which, intensified by the impulses to excel and to imitate, has led to inequality. The inequality has been emphasised of recent years by the invention of large-scale machinery and tools, which can be owned by the few only.

Social Consumption more Characteristic of Animals than of Man.—Not only do we too often find in human

society the ownership of property and acquisition of capital and specialisation without due regard to social ends, but we see consumption not always enlivened as in social insects and animals by a significance of the meaning and purpose of life. The worker-bees draw from the flowers, disgorge the honey from their mouths and accumulate capital for the entire hive. Birds build their nests, beavers their dams, for the use of a growing life. The tremendous toil of the distinct types of ants is adapted to the ever-increasing needs of the colony. Whether in the building of nests or the storing of food in a colony, we find labour and capital deriving their value from social service with the result of an advancing nervous and social organisation. Here again, we find that human industrial society has taken a wrong course, the process and factors of evolution practically reversed, an unpacking of the strands of life.

To take but only two instances from the insect world. The way in which the bees act in times of a social crisis to destroy useless or unsocial elements and in which individuals devise means for their own death in the interest of the community cannot even be dreamed of in communities which aspire after equality of needs and possessions. Again, the social care for the young, from the egg to the nearly adult individual, which we find among some social wasps, bees and ants, is an object lesson to post-war economic reformers, who are dissatisfied with man's often crude endeavours to look after the young, restricted mainly and often imperfectly, as these are, to the family rather than the entire social community.¹

Social Storing among Animals.—The elaborate storing in the bee-hives, carried to abnormal exuberance under man's domesticating tutelage, is correlated

¹ See Macfarlane: *The Causes and Course of Organic Evolution*, which has approached social life and evolution from the biological side.

with surviving the winter, *i.e.*, with permanence, and with the survival of the mothers after the adolescence of their offspring, *i.e.*, with the possibility of economic tradition. The transition from purely domestic storing to social storing illustrated by the bees on the instinctive level is closely paralleled by what has happened to mankind on the intelligent level. The beaver villages with their dam, their circular lodges with a single entrance, contain a residential chamber and a room for common provisions. Common nests, family property or tribal property analogous to the long houses of savage clans, exist among rooks, jackdaws, swallows, etc. They seek their food in common, and in common they regain their night resting-place. Their nests are intended for courtship, for sheltering the eggs and young, and for laying up provisions.

Thomson observes : " In man the storing instinct is far more feeble than in the animal kingdom. It is possible that the habit of saving and storing was transmitted from generation to generation by a domestic tradition which has gradually become enfeebled as industrial life, facilities of transport, and communal storage made man in great measure independent of local and temporary scarcity."

What Man may Learn from Insects : the Better Use of his Powers.—Alike in social saving and storing and care of the offspring the insect-world has much to teach mankind. The provision that many insects make for their yet unborn young is one of the most mystifying manifestations of their mentality, for it seems at first glance to betray an almost superhuman intelligence. It is so mystifying because no insect can possibly foresee the wants of its immediate progeny. It must be remembered that the eggs laid by insects do not when they hatch give birth to winged insects, but to grubs or caterpillars which resemble worms far more than they resemble butterflies or wasps or beetles. And the grubs or cater-

pillars feed on food to which their winged parents are generally strangers and which is stored for them with infinite trouble and ingenuity.¹ Such insects have lived a longer life and had a more enduring history on earth than man, whom they may long survive unchanged. The instinctive dispositions and activities that these exhibit man has either lost or has been unable to acquire. In his case the necessity for greater effort has led to such increased consciousness of self as has now proved a danger to the further evolution of the race. Nothing has promoted this further than the misuse of science and of tools. The science that grew up during the nineteenth and early twentieth centuries has established man's further and fuller mastery over Nature and alleviated human misery, but also has been steadily perfecting the tools and implements which have enlarged a thousandfold man's capacity to waste and to destroy, and to kill "on a wholesale scale." Man has taken more trouble to invent luxuries and forms of unproductive use of capital than to cheapen the necessities of life, and to produce tools that will kill than to add to means of saving life and making the human race happier. Some maniac advocates of destruction have even looked forward to the wholesale bombing and destruction of cities and villages, to the destruction of factories and mines, and to germ warfare: by which they mean the spreading of disease, the poisoning of water-supplies, the deliberate infliction of plagues; and yet to save man from these had been the noble object and achievement of science. This is bound to lead, if there is no change, to a deep revulsion of feeling against tools, and it may lead to the annihilation of man by the things that are his own handiwork. Man's saving and storing are not always species-maintaining. Man not only acquires but also uses capital for wrong purposes, and this is largely responsible for poverty,

¹ Bouvier: *The Psychic Life of Insects*.

waste and unhappiness. The duty of saving capital, governed by a high sense of social obligation and of employing capital for the benefit of an ever-expanding social community, must be brought home to the modern mind so that human life and resources be not squandered to the impoverishment of the race.

CHAPTER IV

DIVISION OF LABOUR

✓ 411
Co-operation a Product of Social Evolution.—It is difficult to conceive of a social state in which a man finds his own food and clothing, procures his own shelter, nurtures his own offspring or fights his own battles. Man's efforts are always in a particular direction, which follows his natural bent of mind or capacity. Mutual aid has not only increased individual capacity but it has also indirectly contributed to social solidarity. Yet the history of mankind reveals many social groups among whom there was very little co-operation and division of labour.

There has been a long process of social evolution, which is characterised by the development of co-operation and division of labour from primitive forms to modern complex organisations.

1 The first division of labour that emerged in human society was the differentiation of employment between the sexes. Among certain species of ants and bees, we find the distinction between workers, idlers and merely reproductive females. The division of labour in their case has been accompanied by rigid physiological specialisation, so that the workers cannot mate, nor can the reproductive queens procure their own food. The primal division of labour between the sexes is seen in all animal groups and human communities. Among deer, bison and elephants we have sentinels who keep watch, leaders who lead a fight and the less strong and timid females who are surrounded by the herd as they roam through the forests. A

more complex division of labour is seen when wolves organise hunting bands, ants engage in war, bees live in industrial communities, beavers construct dams, birds build nests or migrate, and squirrels store food for the winter.

Woman, the Civiliser of Man.—In the human community in its most primitive forms we find that men conduct all hunting and warlike expeditions and procure the food, while the women cook the food, look after the fire, implements and weapons, and procure fuel, and building materials for the home. Where agriculture begins it is the woman who tills the land. The woman is also the earliest weaver and tanner. Though she does most of the drudgery, yet it is she who first draws crude pictures on the floor or on clay, stone, bronze and iron implements. As the earliest house-builder the woman is the first constructive artist, and having nothing to do with the chase and being engaged in the less exacting pursuits of agriculture and domestic crafts, she has leisure to develop the affective side of human nature, with which she is naturally endowed in greater measure than man. Around her, above all, develop the family and home, rather than around man. Family and home cares develop in her certain social affections and impulses, which measure man's social advance. Indeed, so high a value has been set on these characteristics developed in woman by her special work that the ideal of man has been considered to be to attain to the mental and moral eminence of woman as the mother of the home and the race.

Division of Labour and the Social Order.—The division of labour which is established between the sexes among the most cultivated people exerts its influence constantly and in all the details of life. Durkheim says: "Should the division of labour between the sexes be diminished beyond a certain point the family would cease to exist and only

ephemeral sexual relations would remain. If the sexes had never been separated at all, no form of social life would ever have arisen. It is possible that the economic utility of the division of labour has been a factor in producing the existing form of conjugal society. Nevertheless, the society thus created is not limited to merely economic interests, it represents a unique social order. Instead of developing separately, individuals concert their efforts; they are interdependent parts of a unity which is effective not only in the brief moments during which there is an interchange of services but afterwards indefinitely."

Division of Labour Leads to Increasing Specialisation.—Besides the early differentiation of employment between the sexes there developed a more and more marked division of labour as industries became more and more diversified. Differences of physical strength and energy, of mental scope and of quickness and taste all play a part in the specialisation of skill. Gregariousness, sympathy and imitation unite and assimilate while conflict alienates and sunders. These lay the foundation of the division of labour by occupations and functions, which are further and further differentiated with economic and social development. The soldier, the priest and the medicine-man were well-defined characters in the early stages of social development. Handicrafts ceased to be a tribal occupation and families came early to be specialised as carpenters, shoe-makers, boat-builders, metal-workers etc.

Occupational Tribes and Castes.—Though a society has already passed from hunting and pastoral to agricultural and even manufacturing stages, the survivals of the former phases of culture have still their adherents. Thus the servile and the scavenger tribes of India who work in bamboo and leather or ply the special trade of scavenging and who live in

the outskirts of villages, detested and despised by all, are representatives of the hunter, fowler or swineherd in the Indian social system. The Dom and the Doshad in Northern India have only quite recently adopted the use of metals and the descent through the father. The old-time nomads are settling down as scavengers, mat-makers or tanners, even as petty cultivators. Corresponding to them in the South are the Toti and the Talari, who eat leavings and carrion, are well versed in sorcery and magic and worship with liquor and offerings of fowl and pig the mother goddess of the village. Their presence in the village assembly is essential and in some parts of India their evidence regarding the boundaries of land in dispute is all-important before the *panch*. Thus they are here recognised as the earliest inhabitants, though now following a loathsome calling.

Representatives of the pastoral phase of culture are found among the various castes such as the Ahirs, Ghosis, and Gujars who tend milch-cattle, and Gadariyas who tend sheep, sell wool and weave blankets. Thus we have still amongst us tribes who retain herding as their distinct occupation even after agriculture had begun and manufactures developed. The agriculturists proper are represented in the United Provinces of India by the Jats and Rajputs and by the great Kurmi race which has thrown off numerous castes, mostly employed as market gardeners and growers of the most valuable crops—opium, spices, flowers, and so on. The handicraftsmen in every part of India similarly group themselves in tribes and castes.

Exchange, the Condition of Specialisation.—The diversity of occupation in different tribes and castes is only possible because of an exchange of commodities. As a group worked at one occupation more continuously than at another it developed a good deal of skill which it handed down to its descendants. This

is called social inheritance and is of special significance in industrial training.

Social Values—Formation of Classes.—Normally, whenever society of any kind appears there is specialised labour to maintain it in a variety of ways, and that society succeeds best which gives the highest social status to that kind of labour it values most. Thus the gradation of social group is governed in a healthy society by its schemes of values.

Where wealth is prized most, the wealthy form themselves into a special class which considers itself above the cares and toils of a workaday world. Where learning receives the highest honour, intellectuals form themselves into a caste of *litterati* and enjoy material comforts within the limits of an ideal of plain living and high-thinking which it cultivates to maintain its own purity.

In all these ways, social stratification is in itself an index of a society's motives and inspirations.

Shifting of Social Values in India.—In India the new education has given a status and respectability to classes hitherto despised. There is also a change in the traditional attitude towards the different occupations and vocations. Thus the Chamars, who have amassed considerable wealth, have gained a good deal of respectability, so far as the traditional and social scheme allows it; while they abstain from eating carrion and beef, have begun to marry their girls late and seclude their women. In all these respects they are following the traditional standards of social judgment which they are, however, upsetting by their claim to a higher rank on the basis of their wealth. The servile and scavenger castes of India are now depressed; but, if education advances rapidly, a desire for social equality is engendered and religion preaches that scavenging is derogatory to man's purity and dignity: thus a great social revolution will take

place, and it will be a problem to find substitutes for these servile and scavenger castes in India.

NOTES

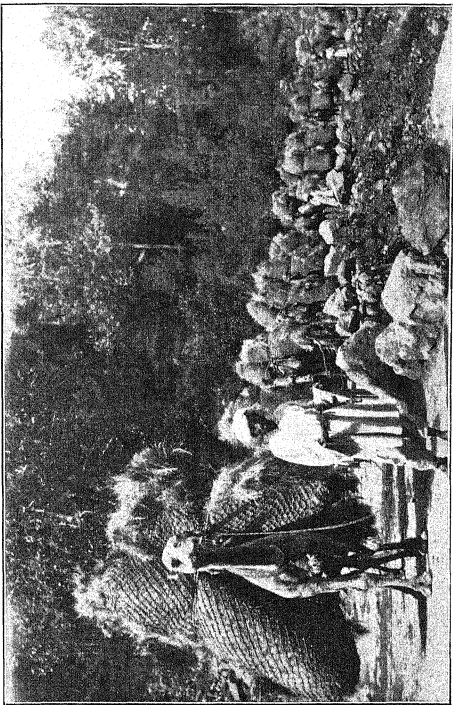
Occupations of Primitive Women.—"Amongst the rudest tribes we find a well-defined division of labour between the sexes. The men do the hunting and fishing and the women the cooking and the general work, which goes under the name of drudgery. The women, being the weaker sex, are also terribly knocked about. In one of his numerous works on the North American Indians, Mr. Schoolcraft says: 'It is well known that corn planting and corn gathering, at least among all the still *uncolonised* tribes, are left entirely to the females and children, and a few superannuated old men'; and he adds that this labour is not compulsory, but is looked upon as a just equivalent for man's labour in the chase and defence. As the women appear everywhere with the savage in his lowest known stage to be told off for all work in connection with the collection of vegetable food, it is more probable that they rather than the men were the first to make tentatives towards acts which may be regarded as originating agriculture."—(H. Ling Roth, *Journal of the Anthropological Institute*, 16: 109-22.)

Social Etiquette and the Occupations of Indian Women.

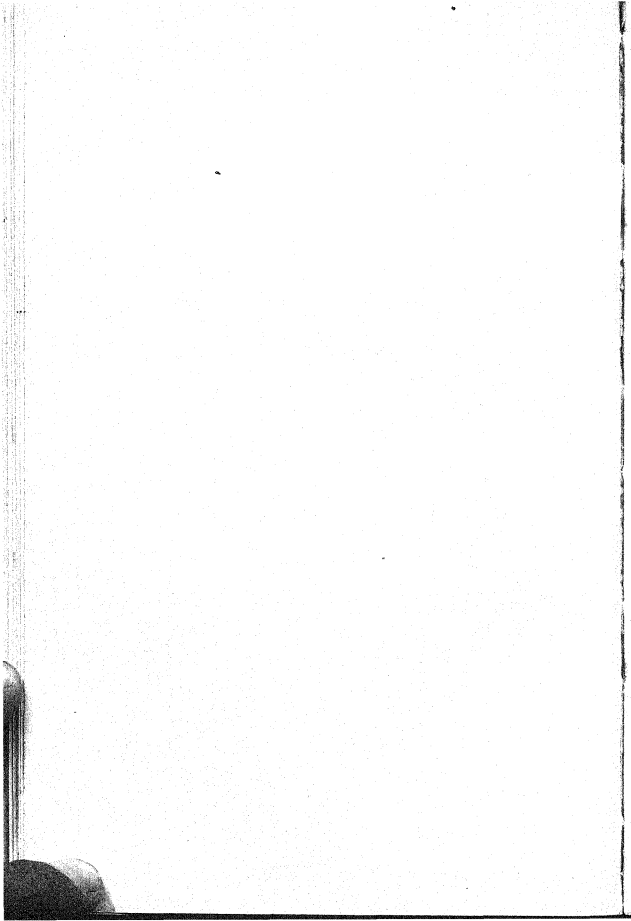
—In the agriculturist's family the women are found freely to assist the men in field work, sowing the seeds, weeding, or assisting their husbands in irrigating the fields. In Bihar, where the pressure of population has led the males to emigrate to Bengal for work, the woman leads a more secluded life, seldom taking an active share in outdoor work, and the seclusion is greater as the family is richer or the caste higher. Agriculturists' wives will on no account come to the fields in which their husbands work, the breakfast being brought there by infant girls or old females, usually the mother. As a rule females do not work in the fields, excepting the very old or very young, who are sometimes deputed to tend cattle in plots adjoining homesteads. But the woman may be sometimes

seen employed in threshing out the grain, winnowing or stacking the hay. In her house, however, the woman works the whole day. She cooks the food, and makes all necessary preparations for that process. She has also to grind the wheat or the pulses on the *janta*, or husk the rice on the *dhenki*, and if she has any leisure she spins cotton or silk threads, or twists the *san*, coco-nut, jute, and *rhea* fibres into ropes. If it is an artisan's family, the woman can assist in the husband's work more materially. In the Panjab the Brahman and Rajput women are strictly confined to the walls of the courtyard where they cook, spin, clean cotton of its seed, grind flour, husk rice and so on. Sikh women are not allowed to work in the field, and some of them are not even allowed to take out their husbands' food; but all of them go out to bring water from the well, or to wash the clothes of the family. They make capital housewives and keep their persons and their houses neat and clean. Among the Tagas and Gujars they go to the well for water and take the dinner to the field, and often pick cotton and safflower. Among the Jats and Rors they also weed, and do other hard field work. The Mussalman women do the household work and sometimes help in the field as openly as do those of the Hindus. Among the Jats the milking of the cows is done by the women of the family; among the Mussalmans, and generally among the Sikhs, it is done by the men. In Bengal there are only 141 female workers over 10 years old per 1,000 male workers, the proportion in England and Wales being 325. Writing of economic conditions of the Panjab, Mr. Calvert remarks: "There is a vast waste of female labour, due primarily to custom and prejudice. In most other countries the proportion of female labour to the whole is high; while its efficiency is equal to the tasks performed; the contribution to the national dividend resulting from this forms an appreciable part of the whole. If there were in Western countries a movement aiming at the exclusion of female labour from all except purely domestic tasks, that movement would endanger the whole economic fabric, if successful would involve those countries in ruin."

Amongst the lower classes of India, however, and it is these who form the bulk of the population, the women have to work as hard as and sometimes harder than men,



Camel transport.



and hence they are less favourably situated in relation to their occupations than their sisters in Europe.

The following occupations employ women nearly the same in numbers or more than men :—

Occupation.	No. of Women Workers per 1,000 Men.
Field labour - - -	846
Plantation work - - -	898
Food Industries - - -	1,259
Dealers in grass, etc. - - -	1,268
Dealers in fuel - - -	1,327
Midwives, etc. - - -	2,141

The Social and Economic Status of the Chamars.—“ There is a real sense in which the Chamar has to do work for which he receives no compensation. These conditions are well known and need no proof. A characteristic illustration is found in the following incident. A young Chamar left his section of the country and took up service. He became fairly prosperous and felt that he had risen in the world. He concluded to pay a visit to his native village. There he chanced upon his old master, who said, ‘ Give me that umbrella. You have no use for it. I will give you eleven annas.’ So, taking it, the landlord said, ‘ Go to the work with the plough to-morrow.’ The next morning the landlord’s servant appeared and forced the Chamar to go to work. In the evening the young man received three pice for his day’s work. He realised then that he was only a Chamar after all. As a class, they are oppressed and they live in continual fear, especially of the Zemindars ; and, far from having the comfortable environment pictured in ‘ Industrial Organisation of an Indian Province,’ their lot is a hard one. They are constantly harassed by demands of all kinds. Men are needed for some odd job and a request is sent to some officer. A peon goes to the Chamar section of the village or town, and impresses the number of persons required. They are supposed to receive wages for their services, but they are more or less at the call of others, no matter what their own interests may be. There are certain duties which they must perform for Government and for the landlord,

and for these they receive certain privileges related to the land. There are, however, many instances where they are required to work without pay, under the direction of petty officers.

"A catalogue of the different kinds of work which the Chamar performs, shows that he belongs to the great class of unskilled labour. He is a grass cutter, coolie, wood and bundle carrier, drudger, doer of odd jobs, maker and repairer of thatch and of mud walls, field-labourer, groom, house-servant, peon, brickmaker and even village watchman. But the Chamar is not now chiefly a tanner and a worker in leather. In the United Provinces the great majority of the Chamars are engaged in 'the exploitation of the earth's surface.' Similarly, we find that, in the Panjab, they are an extensive class of low-caste cultivators; and that in the Central Provinces, the great bulk of the caste, namely, the Satnamis, do not touch leather at all.

"Economically the Chamar is a most valuable element in the population, and his function is the rough toil and drudgery of the community. Though nearly always a poor man, he, as a rural labourer, generally has plenty to do.

"Not only are the Chamars under the heels of the landlords, who they fear may deprive them of their cultivating rights and of their houses, but they are also under the influence of buniya and the landlord, from whom they borrow to purchase seed grain, leather and oxen. Debt becomes a heavy shackle for them, and often the labour of their whole family is employed in satisfying the claims of creditors. As these people begin to discover their rights before the law, and as they gather courage, their position must improve. Not unfrequently Chamars shift to other villages where conditions are more tolerable, or they appeal to someone who is willing to help them to obtain justice. These are encouraging signs. Still, the process which lifts him from dependency to independence is a long one, and as yet he has scarcely begun to move."

—(From Briggs, *The Chamars*.)

44

CHAPTER V

BASIS OF PROSPERITY

Production and Exchange.—In our villages a farmer raises the crop and exchanges it for clothing, implements and for all other things that he needs which do not grow on his land. The farmer is called a producer because he transforms raw materials into the finished products through the aid of nature.

Nature, the Source of Wealth.—Now, Nature is the supreme source of all production and includes all the physical forces which are pressed into the service of man and all those climatic and physical conditions which modify his environment. It is difficult to enumerate all the agencies and sources of wealth which, once converted, contribute to the prosperity of the community.

The following table (after Carver) will give a rough idea of the powers of Nature which are transformed into wealth :—

I.	Land	-	-	-	{	Standing room Vegetable foods Mineral products Animal products
II.	Water	-	-	-	{	For Irrigation For Transport

reptiles, not to mention the larger beasts of prey. Certain harmful parasites which infest the tropics are so prolific that economic activity cannot progress. The sleeping sickness in Africa, malaria, *kala-azar* and hook-worm infection in India have thwarted the onward march of agriculture into hills and forests. But with the advance of modern scientific knowledge, even in the tropics, men are now able to fight malaria and guard themselves against the various harmful bacteria.

Temperate Regions Most Favourable to Man.—

Taking everything into consideration, it is the temperate regions which are most favourable to man's development. Climatic extremes, whether of heat or cold, affect adversely the mental constitution of peoples. The productiveness of Nature is sometimes sufficient to discourage man's enterprise, while the heat and moisture, so favourable to vegetation, have enervating effects on man. On the other hand, a harsh climate and a sterile soil yield but a meagre crop. While in the tropics no clothing or shelter is required for protection, in cold climates most of man's time is occupied in procuring sufficient animal food to keep him alive, and building materials and clothing to protect him against the rigours of the climate.

It is the temperate regions which furnish not merely a wider variety and greater abundance of useful materials such as grass, timber, minerals, but also the incentive to personal effort, without which man's social advance is impossible.

Rivers Friendly to Civilisation.—The great civilisations of the past generally originated in regions where the river was a great aid to the activities of the peoples. In the valleys of the Wei, the Ganges, the Nile and the Euphrates, for example, the early Chinese, Hindus, Egyptians and the Assyrians developed a civilisation where Nature provided the best conditions for a settled life. These great rivers were not merely easy

and cheap means of transport, but also were of great benefit to agriculture. Thus, dense populations grew in these areas and could be maintained there with ease. Sometimes water, by its over-abundance, is an obstacle to man's prosperity. As the jungle often overwhelms a cultivated area with a flood of rank vegetation, so does the river flow back, as it were, on man's habitation, flooding the land or sometimes washing it away. In parts of Eastern Bengal and Assam, the immensity of the mighty rivers, which so often change their courses, has been a hindrance to the development of a peaceful, settled life. *Chars* or sand-beds, which are very fertile and which emerge and disappear in bioscopic succession, cannot promote intensive cultivation with rotation of crops; while the fatalistic outlook on life, which is engendered by uncertain environment weakens the springs of personal effort.

Psychological Factor in Human Progress.—All these examples show the dependence of man upon Nature. But man tends more and more to dominate Nature, and thus the psychological factor gradually plays a more and more important rôle than the geographical factor in human progress.

Man grows new vegetable foods unknown to the region, by his knowledge of domestication and breeding of plants. He makes an infertile land fertile by artificial manuring. He digs wells, invents irrigation devices and can grow crops in arid deserts. He domesticates the animals which become beasts of burden, and adds their service to his limited muscular force. He harnesses winds and waterfalls, and utilises heat and electricity as motive forces in industry. He invents tools, labour-saving machinery and engines which increase production more than a hundredfold. Thus with his greater knowledge of and control over physical forces man becomes less and less dependent upon Nature. It is for this reason that while civilisa-

tion first developed in Egypt, Mesopotamia, India and China, its van to-day is led by races in colder climates in Europe, which in the past were not favourable to man's development and nurtured only cave-men and forest-dwellers when the East supported a rich and varied social life.

Influence of Geographical Environment.—Miss Semple, following Ratzel, has given an excellent summary of the influences of the geographical environment. Human groups first appeared in the subtropics but developed to modern levels of civilisation in the temperate zone. Where they have gone into the tropics their development has been arrested. To the extent that the tropics was man's nursery, it has kept him a child. If the subtropics were the cradle of humanity, then the temperate regions have been the cradle of civilisation. It was chiefly when human groups pushed out into the temperate zone that they progressed.

Man Conquering his Environment.—Nature remains at bottom the sovereign, but man within certain limits can free himself from her interference. His power to alter the physical environment depends on the spread of knowledge, the growth of technique and the command that science gives over the environmental conditions. By far his most important achievement in overcoming natural forces is seen in his conquest of space and time. The improvement of the means of communication has conquered distance and effected a revolution in the saving of cost and time in the transport of goods from distant parts of the earth. Thus the development of the railway and the improvement in ocean traffic are now mainly responsible for the growth and decay of towns, regions and nations. The post and the cable have also co-operated in enlarging man's markets. The effects of famine or abundance in India and Canada are now felt in the markets of London and New York. The inter-

dependence of nations has enormously increased as a result of the improvement of transport. The temperate regions depend for the supply of food and raw materials on the subtropic and the tropic zones, and gradually there has been established a territorial specialisation of labour and industry. Wherever there are natural resources in the tropics which await exploitation science and capital have migrated, and labour has been organised or imported, resulting in the establishment of new industries to meet the requirements of distant peoples. But science and invention are not the monopoly of a favoured nation. They are to-day international possessions. With the spread of modern science and technique the disadvantages of nations due to geographical causes are being minimised. The relative position of peoples in commerce and industry is constantly changing, and economic history is full of records of the rise and fall of nations who have led or lagged behind in the race of discovery and invention. On the other hand, the peace and security of the world rest on a world-wide diffusion of science which, by securing a mastery over hidden potentialities, equalises the enjoyment of the gifts of the earth.

NOTES

The Influences of Geographic Environment.—"Man can no more be scientifically studied apart from the ground which he tills, or the lands over which he travels, or the seas over which he trades, than the polar bear or the desert cactus can be understood apart from its environment. Man's relations to his environment are infinitely more complex than those of the most highly organised plant or animal. So complex are they that they constitute a legitimate and necessary object of special study. . . . Man has been so noisy about the way he has 'conquered Nature,' and Nature has been so silent in her persistent influence over man, that the geographic factor in the

equation of human development has been overlooked. Now the geographic element in the long history of human development has been operating strongly and operating persistently. Herein lies its importance. It is stable force. It never sleeps. This natural environment, this physical basis of history, is for all intents and purposes immutable in comparison with the other factor in the problem—shifting, plastic, progressive, retrogressive man.”
—(From Semple.)

Map of Climatic Energy.—The best climate has three characteristics : (1) it must have cool but not cold winters as a mental stimulus, and warm but not hot summers as a physical stimulus ; (2) it must have a fairly high humidity except in warm weather ; (3) it must have frequent changes of weather. No region on earth fully satisfies all these requirements. South-Eastern England and the neighbouring parts of continental Europe come nearest to the ideal. Japan is another country that approaches the ideal climate because of its favourable temperature, many storms, and frequent changes. According to the map of climatic energy which Huntington has prepared, the North-Eastern, North-Central and Middle-Western States of the United States, England, Ireland, France, Northern Italy, Czecho-Slovakia, Austria, Switzerland, Denmark, Belgium, Holland and Southern Scandinavia lie within the zone of most favourable climatic conditions in the world. It is interesting to compare Huntington's map of climatic energy with the map of civilisation, noticing how the latter parallels the former.

Effects of Rice Culture on Civilisation.—“ Rice culture is a distinct help in promoting civilisation. For one thing, a rice-farmer can profitably keep cattle. Even though the animals are small, they can plough the soft soil of the weedless rice-fields. As they can be fed on rice straw the scarcity of good grass is not important. They also enable him to use the same fields permanently, for they supply manure and thus the soil does not become exhausted.

“ In the next place, since the enrichment of the soil enables the farmer to devote his energies to one particular piece of land, he is likely to build new rice-beds, take care

IDEAL DISTRIBUTION OF VEGETATION AND CIVILISATION ON A SIMPLIFIED GLOBE.

Type of Vegetation.	Approximate Latitude.	Climate.	Density of Population.	Condition of Civilisation.	EXAMPLES.	
					A. Foreign.	B. United States and its Dependencies.
(1) Equatorial rain-forest	0-7	Always hot and moist	Sparse	Very low	Amazon Basin	Panama Zone, South Philippines
(2) Tropical jungle	7-15	Always hot; long rainy season, short dry season	Dense	Low	Southern India	Porto Rico, Virgin Islands
(3) Tropical scrub	10-20	Always hot; long, dry season	Moderate	Low	Northern edge of Yucatan	—
(4) Savanna grassland	15-25	Always hot or warm; dry season and wet season	Moderate	Low	Sudan	Small parts of North Philippines
(5) Desert	20-35	Always dry; warm winter, hot summer	Sparse	Very low to high	Arabia	Nevada
(6) Subtropical dry forest	30-40	Cool, moist winter, but hot, dry summer	Moderate	Medium to very high	Spain	Southern California
(7) Prairie	35-45	Cool, dry winter; hot, rainy summer	Dense	High or very high	Hungary	Iowa, Illinois
(8) Deciduous forest	42-55	Cold, snowy winter; hot, rainy summer	Dense	Very high	England, France	New York
(9) Coniferous forest	55-65	Long, cold, snowy winter; short, warm, rainy summer	Moderate	High	Northern Sweden	Pennsylvania, Nthn. Maine, Northern Wisconsin
(10) Tundra	65-75	Long, cold, snowy winter; short, cool, rainy summer	Sparse	Very low	Northern Coast of Canada	Northern Alaska
(11) Polar desert	75-90	Always winter	No people	Absent	Northern Greenland	—

—(From Huntington and Cushing's *Principles of Human Geography*.)

that he has a good supply of water, and that all his little ditches and dykes are in good order. He finds that the work of one year gives him much benefit the next. Moreover, he cannot go off and leave the rice crop untended, for a week's carelessness will ruin it. All these conditions cause the careful rice-raising people of India, Java and Indo-China to be more industrious and reliable than other tropical farmers. For the same reasons they are more hopeful and progressive, since they have learned that their efforts are not in vain. Moreover, as the population where rice is raised is much denser than elsewhere, wild animals do less damage than in other tropical regions, roads can be maintained, and the people can get more stimulus from one another and from outsiders."—(From Huntington and Cushing's *Principles of Human Geography*.)

Rice culture, above all others, with its family co-operation in the field, its further co-operation of village and beyond, for water and water-levels, has worked potently to produce the associated family life of India, the patriarchal family of China, and the co-operative village organisation of Southern Asia.

CHAPTER VI

WELFARE

JS ✓ Primary and Secondary Industries.—Nature left alone is miserly ; but with labour applied she yields rich treasure. There are various ways of directing labour to the forces and materials of nature, so that they may assume forms which satisfy human wants, *i.e.*, become transformed into wealth. Of the forms of wealth some depend directly on the original sources as Nature provides them, while others produce commodities through labour. This has been the main distinction between primary and secondary industries. Mining and agriculture belong to the first class, manufacturing and merchandising belong to the second.

Anti-social Activities.—There are other ways of “producing” wealth which do not add to the total wealth or well-being of the nation. Thus, when one obtains something by deceit or robbery, someone else loses and society does not gain anything. In animal life property sometimes appears in the form of plunder. Thus, the hawk and the hornet have made a business of theft. The bee defends its hive against the predatory habits of the wasp. It has a sense of collective property and it guards its own accumulations. Accordingly, the whole swarm sets on the robber wasps and chases them as far as their boundary, and little wars between the insects are not uncommon. In much the same way human hordes often turned upon each other, and their prowlings about the precarious supplies of food evolved in the course of time into the wars of civilisation.

Economic Goods.—Society in its process of development selects social modes of living, discouraging those which hinder mutual service. Those things which are useful and scarce concern society most, and when these are transferable they are called economic goods. Out of the great fact of the scarcity of certain things at certain times and places to satisfy wants grow such ideas as property, labour, and exchange. Not all things, however, which are useful and scarce are transferable. Thus honesty, frugality or diligence, are not exchangeable. On the other hand, teachers, lawyers, physicians, policemen and those who are engaged in domestic or public service, render services which are transferable and should be reckoned as economic goods.

Public Opinion a Better Protection than Law.—It is essential to distinguish between social and anti-social ways of getting a living. That society succeeds best where public opinion is sufficiently effective in forbidding people to do harmful or useless things and encourages production and service in every form. Law is often invoked to check false advertising, counterfeiting or deception, but as vice changes its guise society has to depend more on an effective social conscience than on legislation. Thus the whole problem of unskilful medical aid, unscrupulous advocacy, political demagoguery, adulteration and speculation is very difficult of solution by law. A high standard in the acquisition of wealth, in political campaigning or in social discussion, can be reached by an effective public sentiment only, which must encourage in every possible manner all useful or social ways.

Responsibility of Wealth as Ruled by Public Opinion in India.—Perhaps a more important need of every society is a general feeling of the social responsibility of the wealthy. In India the ideal of material comfort has always stood in the background and the duties

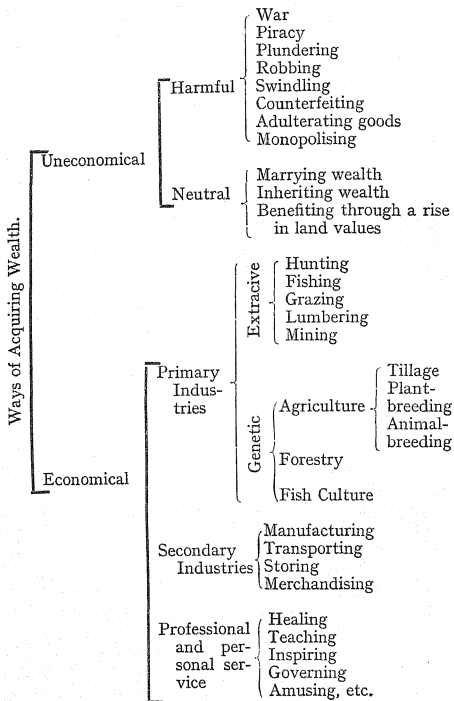
of wealth are inculcated by religion. Throughout India wells, tanks, irrigation channels, roads and embankments, as well as village guest-houses and temples, often have been erected and maintained by people who cannot be regarded as very wealthy. A portion of the rate of profit is always set apart by the traders and merchants for religious, social or philanthropic purposes. In the South this is called *mahimai*, in the North it is called *punkhata*. Such contributions for the maintenance of works of public utility and services often amount to thousands and even hundreds of thousands of rupees. Among the Muhammadans there is the *zakat*, a religious obligation to contribute $2\frac{1}{2}$ per cent. of the income, which contribution is usually spent for the support of mosques, schools and orphanages. Hardly is any considerable amount of money acquired in trade or money-lending in India of which a portion is not devoted to the erection of a temple or a guest-house, or the maintenance of schools, orphanages and animal shelters. The social conscience has condemned the evils of ostentation and the passions of material enjoyment and has encouraged the devotion of wealth to public purposes for the benefit of the community, though such purposes often have been determined with reference to a man's caste, religion or communal ties. All this has mitigated to some extent the contrasts of poverty and wealth. Unfortunately, there has been no discrimination between misfortune and deserved poverty in the Indian methods of charity, and indiscriminate alms-giving is enjoined—to the encouragement of pauperism and vagabondage even amongst the able-bodied. The social and economic conditions have changed, and the methods of charity have to be altered and suited to new public services which do not awaken as yet sufficient response from the wealthy. But the tradition of the social trusteeship of wealth is a great asset; and, though

it has waned to some extent with the growing importance of new ways of acquiring wealth over which society has not yet claimed its right to be heard in its control and disposition, it will be more conducive to social peace and stability than any legal interference with the distribution of wealth.

Protection from Exploitation.—The whole trend of recent social legislation in the West has been to protect the poorer classes from exploitation. The wage-earners are now given fair or living wages, the peasants' rights are secured, the public are protected against profiteers, the borrowers are protected against usury, and the shareholders are protected against speculation and artificial watering of capital by company promoters. In India, Land and Factory Acts and other legislative measures seek to achieve the same object; but, since public sentiment is neither strong nor effective enough, the uneconomical or even harmful ways of acquisition of wealth, which can neither be repressed by the Government nor checked by the people, are still abundant.

Activities Beneficial and Otherwise.—Carver has given a table of activities (see page 48) which enrich the nation as well as the individuals who carry them on, and the activities which may enrich the individual without any benefit to the nation, and sometimes with positive harm to it.

Importance of Right Desires Rightly Met.—It is a great thing for a people to desire the right things and to obtain them by right means. History is strewn with wreckages of peoples who declined because their wants were wrong or because they adopted harmful ways of satisfying them. Where desires are wrong, an industrial system, however efficient, promotes national deterioration. On the other hand, an uneconomical industrial system, which cannot satisfy the primary wants and give enough leisure to a people, cannot promote progress.



Population and the Standard of Living.—In the West the maintenance of the standard of living places a limit on the increase in the numbers who continue to support themselves by agriculture, but in India this is not the case. Here the low standard of living of the larger portion of the population, along with the custom of universal marriage, which seems to be independent of economic considerations and of uncontrolled marital relations, has given India a high average birth-rate. On the other hand, diseases due to climatic and physical conditions, combined with non-hygienic customs and traditions of the people, and their complete ignorance of and indifference towards all the circumstances from the cradle to the grave which make for health and reduce the power of resistance to disease, keep up the death-rate. The standard of living maintained in agricultural populations of Europe seems to have been adjusted to a density of not more than 250 persons to a square mile. In the Ganges valley some districts show a density which is more than thrice this:

				Density per square mile.
Gorakhpur	-	-	-	721
Benares	-	-	-	899
Jaunpur	-	-	-	745
Saran	-	-	-	872
Muzafferpur	-	-	-	907
Darbhanga	-	-	-	870

Such densities are unparalleled in any rural tracts outside China. In these regions, unless some radical change is introduced into the system of agriculture, the soil cannot bear a greater pressure of population than it is subjected to at present. The cultivated

area is increasing and scarcity of pasturage for cattle has become a menace. The increase of population has meant also a subdivision of holdings, which become so small as hardly to be able to maintain the peasant's family. But the peasant owns substantial rights in the little holdings and will not readily give them up when the time comes to leave agriculture for another occupation. Thus, when the rainfall is inadequate or the prices of crops are low, there is an increase of mortality from such diseases as malaria, dysentery, and so forth, due to loss of resisting power on account of economic circumstances. In districts in Eastern Bengal the agricultural population can maintain a higher standard of living than in Western Bengal or the Eastern plains of the Ganges by superior agricultural methods and choice of crops. The mean density of agricultural population in the Panjab is much lower than in the United Provinces. The progressive extension of canal irrigation has added a cultivated area of nearly 22 per cent. and the average Panjab peasant already lives at a standard of life which is distinctly above that of the peasantry in the Eastern plains and even of a large portion of the peasantry in Southern and Eastern Europe. Another area of a very high rural density, reaching in parts to 1,000 or even 1,200 persons to the square mile, is found in the coastal tracts of the south of India, including the States of Cochin and Travancore. Here, in addition to the favourable climatic conditions, the steady substitution of more valuable crops such as coco-nut, rubber and tea for rice, has enabled a very closely aggregated population to maintain a comparatively high standard of living.¹

Problem of the Indian Peasant.—Throughout the country the peasantry is showing a desire for small comforts and conveniences unknown before, such as matches, knives, looking-glasses, cigarettes and similar

¹ *Census of India, 1921, Vol. I, Part I.*

trifles, but the standard of living has not shown a decisive rise. Meanwhile, the methods of cultivation have not changed, and the increasing numbers in some areas, characterised by an exceptionally high density of population, are compelled to maintain their standard of living by emigration or by leaving agriculture for industries, either alternative implying some amount of unrest and unsettlement. Their small resisting-power makes them particularly liable to the onslaught of the principal diseases.

Handicap of Ignorance.—There cannot be any rise in the standard of living so long as crass ignorance perpetuates most primitive implements and wasteful methods of soil exploitation and the old customs and attitudes towards the vital conditions remain unchanged. Until they change in the direction either of greater economy or greater care of infant life the trend of the death-rate will not much alter, excepting in so far as scientific efforts can improve the surrounding conditions and fend off the onslaughts of the more virulent epidemics. How much human sorrow and economic loss are due to ignorance of rules of hygiene and to bad feeding of children, who live through the nursing period, under unwholesome conditions, to die soon after being weaned ! Plague, cholera and small-pox, which decimate thousands every year in Indian homes, can be prevented easily by disseminating knowledge regarding these diseases and the value of proper treatment, of evacuation of infected places and of inoculation. Influenza, which has wrought such havoc recently and whose effects on the population will be traceable well into the next decade, is capable of treatment. Even elementary knowledge of simple rules of health would have rendered it far less disastrous. It is estimated that the case mortality was rather under 5 per cent. amongst Europeans, about 6 per cent. among Indians of the higher classes who were able to obtain medical attention, and anything

over 50 per cent. among the Indians of the countryside who had no knowledge of the treatment to be adopted and could not obtain medical aid. What loss to agricultural operations and increase of mortgage debt due to loss of cattle could have been prevented if our villagers had knowledge of proper segregation of infected cattle during cattle epidemics or had grown the proper fodder during times of scarcity! How much human mortality during times of famine could have been prevented by utilisation of forest herbs, roots and fruits and the introduction of cheap catch-crops during the long idle periods! How much food that is daily consumed is lacking in elements needed to build the muscles and to maintain the body-heat!

Improvidence.—How much poverty, again, could have been prevented if there had been a strong will, a noble effort and a wise anticipation of needs! How vast a portion of the mortgage debt of the country is dissipated, and is of no account to the land! How often are the fruits of hard labour wasted for caste-dinners and rejoicings when if stored in a bank they would have saved the family as the years impair the vitality! In India there is particular need of the knowledge of budgets, so that the peasant might take a year's wages and carefully and intelligently plan a year's expenditure. What can be done for the Indian peasant if he remains content with brutal ignorance even when this brings starvation?

Provisions for Peasant Welfare.—Ignorance can be overcome by a well-organised school system only. But education is not enough. India must keep alive the popular traditions of good taste and beauty, so that there may be dignity in life even when resources are limited. In India even the poor have the sense of order and are determined to be clean. It is this which prevents the association of degradation with poverty. But the people must be trained to receive new theories of practical living. Where poverty has

weakened character or suppressed the artistic sense the new art of living must be taught. A good deal in this direction can be done by the State. The intelligentsia, as rulers in local as well as central bodies, must give direction and guidance. Social policies which conserve and most wisely use public resources are moulded by leaders in every field in education, or social reform, by contagion or imitation. They must have the love and social sympathy, which alone can bring about the much-needed reform of the social habits of the people.

NOTES


Indices of Progress.—Various tests of progress have been put forward from time to time. Certain indices of progress have also been suggested which will enable us to measure civilisation and progress statistically. If progress be merely a subjective term, it is admitted statistics can throw no light upon it because all such ends as happiness or self-realisation or social service are incapable of statistical measurement.

The following may be taken as indices of progress :

1. Increase in population.
2. Increase in wealth and in the consumption of goods.
3. Length of life.
4. Diffusion of culture and, "when it becomes possible to measure it," the productivity of men of genius. This measures intellectual progress.
5. Decrease of crime. This measures moral progress.
6. Increase of individual liberty. This measures the progress of the social and political organisation.

Types of Exploitation.—(1) Cannibalism ; (2) Slavery ; (3) Serfdom and *Eegar* ; (4) The Wage System. Exploitation in modern society is shown in "high finance," in the relations of capital and labour, in immoral standards of buying and selling, in war profiteering and governmental contracts, in the relations of skilled and union labour to

unskilled and non-union labour, in the attitude of corrupt politicians to the public, and generally in a system that permits the burden and misery of society to fall to the lot of those least able to shift it to others. Ross observes : " All about us we see one human being making use of another, the wife becoming a barren parasite, the husband becoming a loafer on the earnings of his wife, the grown-up son hanging about home living on his parents, one brother or sister absorbing the earnings of another, friend taking advantage of friend, and such like. The thing is common and its rule is simple. In any sentimental relation the one who cares less can exploit the one who cares more." In Burma and Southern China the idleness of the men arises from the power of tradition over the division of labour between the sexes. Women do all the work, while men have become little better than loafers. In India the landlord glories in the abasement of his tenants and courtiers. The village moneylender is conscienceless in his exploitation of labour. The trader goes to the uncivilised native in the mountains or jungles and induces him to part with everything he has for gay cloth, knives, spirits or opium, or tempts him with goods on credit. Labour for the mines and the plantations is recruited through agents who go about and hook the guileless peasant. The peasant signs a bond, but usually he fails to realise where he is to work and how. The greedy priest plays upon the superstitions of the peasant on the occasion of a death in the family, and fleeces him. Exploitation changes its guise as readily as vice, and is inevitable as long as there is ignorance of social conditions and a general apathy in respect to social aims. Neither religion nor a legal system can transform man's nature. The respect for man as man and a high standard of social morality enforced by a broadly intelligent public opinion—these alone can bring about the desired change.



CHAPTER VII

ECONOMICAL USE OF LAND

Development of Land Industries.—The distribution of agriculture and industries depends upon the balance between population and the natural resources of the region. When man was the hunter he roamed through the entire forest and wanted the largest space from which to procure his food. As the game became scarcer and shier, the hunter learned to discriminate between carnivorous and intolerant animals and gregarious and tolerant animals. The former he went on killing, but the latter he began to protect and breed. Wherever there were such animals as the ox, the horse, the mule, the goat, the ass, the sheep, the elephant and the camel, the hunting folk easily passed into cattle-rearing. This had been the case in Asia, where those animals were first domesticated. Later it was from the steppes of Central Asia that these were introduced into the Mediterranean region in the course of migrations of people. In the new world the only domestic animal is the llama of South America, and consequently there was no real pastoral period in the progress of the races there. As domestication of animals becomes more and more improved, the adoption of agriculture becomes easier, because the animals aid ploughing. But before plough agriculture came into vogue, the ground was superficially worked with the hoe, principally by the women. Gradually the hoe culture system was superseded by a more formal agriculture, in which the use of implements and plough and later draught beasts and steam power

prevailed. But this took thousands of years, nor was the course of development uniform in all the races and the regions. For everything depended upon the vegetable foods, raw materials and animals at the disposal of the people in a particular region.

Intensive Agriculture.—When a region becomes thickly populated, every endeavour is made to get as much out of the soil as possible. Thus is introduced what is called intensive agriculture, which implies the use of large quantities of labour and capital in the cultivation of relatively small areas of land, in order to get large crops per unit of land. In South-Eastern Asia the dense population can only be maintained by intensive agriculture, an essentially vegetable diet and the omission of animal raising. Such crops as can be produced economically, or products which are capable of yielding large quantities of food per unit of land, such as rice, potatoes, parsnips and beans, are consumed more generally than wheat and beef which occupy a great deal of land.

Relation of Agriculture to Civilisation.—Of Chinese agriculture Hahn observes: "That two and a half acres of poor garden land produces more than an equal area of good pasture land is known to every peasant, but we have never troubled to draw any deductions from this." Simon in his book, *La Cité chinoise*, reckons that, after the introduction of intensive *petit culture*, France could easily feed two to four times her present population. In England the Board of Agriculture has recently declared that information, made available by research and experiment, is sufficient to show that the number of cows which can be maintained on the produce of a given area of land is from two to three times greater when that land is under the plough than when it is under grass, and that it is possible for a small-holding of from fifteen to twenty acres to be made an economic undertaking. By a highly intensive agriculture, with

which are associated a large number of small industries and handicrafts, China and India maintain more than half the population of the world. As contrasted with the Eastern type of cultivation, the Western type is, indeed, far more wasteful of the resources of the soil. As a matter of fact, this extensive agriculture, coupled with animal-raising, has been so wasteful that it has kept civilisation in the cold frontiers, as in Canada and Alaska, always on the march. The Western nations have been great colonisers since the Greeks of old. They tend to expand on more land than to stay where population is dense. The stay-at-home Eastern peoples have conquered *wanderlust* and have shown a living closeness and sympathy, a toleration for most varied customs and usages, that is the outcome of settled peaceful habits of dense masses of population. There have also been encouraged a local initiative and creativeness, which have served as bulwarks against the invasion of any extraneous centralised authority. Thus, the difference in the types of civilisation is rooted in the spatial relation of the people to the soil.

NOTES

Utilisation of Energy.—“Population in round numbers which the earth could support at different periods :

“ Barbaric period	- - -	100 millions.
Agrarian period	{ Present	- 1,500 „
	{ Maximum	- 20,000 „
Period of full utilisation of energy	- - -	3,000,000,000 „

“ During the war Germany proved that she is almost capable of supporting a population of 120 per square kilometre. But Germany is neither a very fertile country nor is the very most made of it as yet. Even China, not including Mongolia and Tibet, with her ‘unscientific

agriculture,' has succeeded in supporting a population of about fifty-two to the square kilometre, which, were the whole world equally densely populated, would be equivalent to a population of about seven and a half billions."—(See Nicolai: *The Biology of War*, p. 49.)

Relation of Man to the Soil.—The ultimate basis of economic activity is the food supply. The way in which land is utilised depends upon the amount of food that has got to be raised from it, or, in other words, upon the density of population. On this point Woodruff observes: "The higher the culture, the more food can be produced from a given area, for cultivated land produces two thousand times as much food as an equal area of hunting land, and in the future it will produce still the more. A country that could support one savage hunter for each fifty square miles, might support ten pastoral people, or a hundred semi-civilised agricultural and pastoral, or 1,600 to 2,000 modern farmers."

Thus, as density of population increases, land should be used as economically as possible. One way of economising it is to substitute vegetable diet for meat diet. The American farmer grows corn and feeds it to cattle and then eats the cattle; but one ox eats as much as five men and requires as much land for his support; so the numerous Orientals omit the animal-feeding stage and grow rice and vegetables and eat them rather than feed them to animals. Great increase in population could result from the essentially vegetable diet and the omission of animal raising. The ox that consumes as much as five men lives at least two years and will not produce over 750 lbs. of meat. It is reported that the excessive amount of 5 lbs. of meat is allowed the Argentine cowboy. Thus an ox represents in terms of land 150 days' rations for the Argentinian, viz., 3,650 days' rations (10 years) for the Indian—one of the many striking results produced by difference in density in population.—(Russell Smith: *Commerce and Industry*, pp. 481-2.)

A second way of economising land is to substitute heavy-yielding for light-yielding crops. Some crops are more productive than others, and hence with growth in population, the latter have to be superseded by the former.

CHAPTER VIII

PROBLEM OF FOOD

Food of Aborigines.—The aboriginal population of India lives mainly on edible forest products, the most important of which is the flower of the *matina* tree with other jungle fruits and roots which are eaten both cooked and raw. This kind of food is very injurious, unless it is supplemented by rice or other healthy food grains. These people often consume flesh, both burnt and raw, of animals they hunt, and the carcasses of dead cattle which are thrown away at the outskirts of the village. This also is injurious to health, but the food in better condition would have been rich in protein.

Diet of the Indian Population.—It is estimated that nearly half the population in India do not eat more than once a day, and the food they take is deficient in proteid. This means low resistance and even predisposition to disease. It is true that *dal* is consumed largely in every part of India, and that fish is the main food in Eastern Bengal and along the Coromandel Coast and Malabar among the lower classes ; but the national food is in many parts almost entirely non-proteid. The wheat-consuming peoples of Northern India do not suffer much from this deficiency, as is evident from their strength and physique. It is found among the rice-eating peoples, however, that whenever the nitrogenous element is increased there is greater increase of faecal nitrogen. Rice is well digested in the intestines, nearly all the starch being absorbed, while the protein absorbed

varies from 45.76 to 34 per cent. In the case of peas, largely consumed by all rice-eating peoples, McCay finds that 25.42 per cent. of the nitrogen of the food appears in the faeces of Bengalis, while only 15 per cent. appears in those of Europeans on a vegetable diet. The disproportionate richness in starch (80 per cent.) of a dietary composed mainly of rice hinders the absorption of protein and gives rise to excessive fermentation processes, thus inducing digestive disorders and further hampering absorption by the rapid passage of food through the digestive tract. The purely proteid diet in European fashion is, indeed, utterly disagreeable to the Indian constitution, and, apart from a metabolic viewpoint, the clinical bearings should also be taken into consideration, *e.g.*, the rarity or absence of gout and rheumatism. Rho emphasises that, in making a dietary, the racial food peculiarities, which are, after all, adaptations to the climate, should always be taken into consideration, *e.g.*, the beef-eating Englishman requires a different dietary from that of the rice-eating population of South-East Asia. Rice is the poorest of all cereals in protein (less than 7 per cent.). In Northern India wheat, which contains not much above 50 per cent. of starch, though adulterated to some extent with barley, is consumed in a larger degree than rice, the staple food of the rest of India. Among the higher classes, however, rice is stripped of its husk, which contains vitamins, and loses the most nourishing part. Rice germ is much richer in vitamin B than is the bran. The commercial rices of India are not completely devoid of vitamins as are the polished rices used in Europe and America. The bazaar rice consumed by the lower classes is milled far less effectively and contains more vitamins. The Indian labourers can seldom get meat and fish, milk and butter, which contain other essential vitamins; but leafy vegetables and fresh fruits, lemon, onion, green and dry

beans, carrots, turnips, etc., supply an important addition to their diet. Yeast, which is consumed by these classes, is also a valuable source of vitamins, and has the additional element of being comparatively rich in protein and of improving the appetite. Altogether, the protein supply in Indian dietary has reached its lowest limit, the economy with starchy and sugary food acting over immense spaces of time inducing corresponding physiological adaptation.

Why Indians Eat Rice.—There are several reasons for this: (1) Rice, containing more starch than is advisable, is amongst the most prolific yielders and therefore the most economical. (2) The cultivation of rice makes possible the using of marsh land where other cereals would not grow. Besides, rice usually yields two crops a year in the monsoon regions. (3) The cultivation of rice demands many hands and continuous work. It discourages animal husbandry and raising of cattle for meat and is associated with great density of population. (4) Rice is very quickly and easily digested, conditions that are important in warm and damp countries where the other cereals cause indigestion. It is noteworthy that the introduction of a cheap staple food like the potato, which also is a prolific yielder, will contribute much to the mitigation of poverty and add an important article to the Indian vegetable diet. In South India potato is a luxury even among the middle classes. A more nutritive diet is necessary if we want greater efficiency, which alone can prevent poverty. In India it is probable that this will take the form of vegetables, potatoes and meat rather than of more milk and *ghee*. The mass of the population at present cannot afford butter at all. In the South they drink milk curd and oil made from coco-nut, which is abundant in South India.

Indian Food Budgets.—The following is an estimate

of the quantities of food consumed by a family of four in Madras:

Rice	-	-	-	-	1 $\frac{3}{4}$ seers per day.
Coco-nut	-	-	-	-	1 for three days.
Salt	-	-	-	-	1 seer per week.
Chillis	-	-	-	-	$\frac{1}{2}$ " " "
Vegetables	-	-	-	-	—
Betel	-	-	-	-	—
Toddy	-	-	-	-	—
Milk Curd	-	-	-	-	1 seer per day.
Coco-nut Oil	-	-	-	-	1 bottle for 20 days.

Tamarind and onion, which are consumed largely by the poorer classes in the South, are important sources of vitamins.

Here is an estimate of the quantity of materials consumed by a family of five persons, including two babies, in a Deccan village:

Bajri and Juar	-	-	-	192 lbs. per annum.
Rice	-	-	-	48 " " "
Pulses	-	-	-	80 " " "
Wheat	-	-	-	48 " " "
Sugar	-	-	-	30 " " "
Salt	-	-	-	48 " " "
Chillis	-	-	-	24 " " "
Oil	-	-	-	12 " " "

Improvements in National Diet.—Fresh milk, butter and *ghee* are finding a profitable market in the cities, and butter often sells at a higher price than *ghee*. In many districts adjoining the great cities the peasants have begun to sell their fresh milk, butter, *ghee*, fish and eggs; but, while in Denmark and Holland the villages import less valuable butter and eggs from Siberia as they export their own articles to England and Germany, this has not been the case

in India. Thus, the improvement of transport has meant a poorer diet for the mass of the population, though there has been gain in the increase of family income. Potato has become a very popular food in Bengal and in the United Provinces, and there has been a great increase of consumption of vegetables within the last few decades, and meat has introduced itself into the diet of the middle classes. But the preponderance of starch and sugar still continues, with its accompaniments of distended stomach and dyspepsia. A sudden increase of meat consumption which is not followed by strenuous exertion also has led often to digestive troubles. Among the poorer classes the supply of proteids might be increased by an improvement of methods of catching fish in seas and rivers and of raising them in ponds. In Europe and Japan the remarkable increase in the stock of the carp and other edible fish is traceable chiefly to their culture in ponds and other confined waters, and also to the artificial propagation on a large scale made by means of hatcheries. In America the hatcheries are used not only for stocking ponds, but also, what is of special interest to us in India, in systematically replenishing the large rivers and lakes, many of which, by this means, have been restored from a state of exhaustion to one of great abundance, exceeding that which unassisted nature achieved before. The Chinese satisfy their craving for proteids by eating rats, dogs and other animals, as well as dried fish, and by raising beans in enormous quantities. In India we should aim also at curing and preserving fish and rendering dry fish palatable. Dried fish is largely consumed in South-Western India. The use of *dal* and bean in diverse forms could also be made more popular than is now deemed possible; *dal* flour and *dal* paste as in Northern India and *dal* cured as in the South should be introduced into the dietary in every part of the country; while bean oil, bean macaroni and

pickled beans, popular foods of the Chinese, ought also to be tried. Fruits and nuts and green vegetables, with their health-preserving vitamins, are needed to work out a balanced diet. There is little that is magical in the present emphasis of the importance of vitamins. It is for the average Indian a safeguard against the sophistication of his food by modern fashion and commerce. There is no doubt, however, that a greater danger in India, both among the poverty-stricken and the richer classes, is from monotony of diet, and experiments should be tried and religious and other prejudices fought in introducing a sufficient variety in food to maintain health and vigour. The development of vegetable gardening, the establishment by municipal authorities of dairy and poultry farms, and communal hatcheries and the importation of more oranges, etc., suggest themselves as means by which natural foods may be made more available and at lower cost in our big cities. Reform also is needed in methods of cooking which often lead to the waste or sometimes total loss of the nutritive elements of particular foods. Recent studies have shown how overcrowding, imperfect hygiene and, above all, infection may influence the onset or modify the course and character of a malady due primarily to dietetic defects. For instance, a diet deficient in vitamins and disproportionately rich in starch leads to depression of digestive and intestinal function. If these organs are exposed at the same time to the action of pathogenic organisms their depression, which is at first functional, may become accentuated or fixed by organic changes due to them. These organisms, which may be comparatively harmless when the subject is properly nourished, take on rank growth in those debilitated by deficient food, and impart endemic or epidemic characters to diseases. It cannot be too strongly emphasised that many of the infectious scourges to which Indians are subject—such as infan-

tile diarrhoea and tuberculosis—require consideration as much from this point of view as from that of the pathogenic organism to which they are due.¹

NOTES

The Essentials of Good Diet.—A good diet must contain two main elements—carbohydrates and proteids. (1) Carbohydrates are substances such as starch, sugar and fat composed of carbon, hydrogen and oxygen. The carbon is slowly burned in our bodies, and thus gives us warmth and energy. (2) Proteids are substances such as cheese, meat and fish, containing nitrogen. They are necessary because without them the body cannot build new tissues and repair its continual waste. An ordinary adult requires about eighteen ounces of carbohydrates and four to four and a half ounces of proteids per day. For children, sick people or those who are working very hard, the amount is different, but in general the carbohydrates should be four or five times as abundant as the proteids.

In addition to these two main food substances certain others called vitamins, and the acids of fruits, are needed in smaller quantities. A good diet should contain not only the right amount of carbohydrates and proteids, but also should vary from day to day so that people may not tire of it, and may be sure to get all the needed elements.

The table shown on page 66 (from Huntington and Cushing's *Principles of Human Geography*) gives the nutritive value of the different kinds of foods.

Excess of Rice Consumption.—The researches of Major Dr. McCay into jail diets, which have been published in the *Scientific Memoirs* of the Government of India, have shown that a diet which includes more than twenty ounces of rice is in excess of physiological requirements. In the Madras Presidency the grain ration of a labouring male convict has in recent years been reduced from twenty-four ounces to twenty ounces, and the reduction has been followed by an improvement in health and a decrease in bowel complaints. The ration of *dal* (split pea) for a labouring male convict is in some provinces six ounces per

¹ McGarrison : *Studies in Deficiency Disease*.

Kinds of Food.	Percentage of Waste such as Bone, Shells, etc.	Percentage of Water.	Percentage of Mineral Matter.	Percentage of Food Material.	Pounds of Material to be Brought to get 4½ ounces of Protein.	Pounds of Material to be Brought to get 18 ounces of Carbohydrate (including Fat)	Index No.: Plus = too much Carbohydrate Minus = too little Carbohydrate (i.e., too much Protein).
<i>Animal Products.</i>							
Fish							
(Fresh Cod)	30	58	I	II	2.5	564.0	-226.0
Eggs - -	II	66	I	22	2.1	12.2	- 5.8
Beef - -	15	53	I	31	1.7	7.4	- 4.4
Pork (Fresh) -	15	45	I	39	2.1	4.3	- 2.0
Milk - -	0	87	I	12	8.5	12.5	- 1.5
Butter - -	0	11	3	86	28.2	1.3	+ 21.6
<i>Cereals.</i>							
Wheat - -	0	11	2	87	2.1	1.5	+ 1.4
Rice - -	0	12	0*	88	3.5	1.4	+ 2.5
<i>Vegetables.</i>							
Peas (Dried) -	0	10	3	87	1.1	1.8	- 1.6
Beans (Dried)	0	13	4	83	1.2	1.8	- 1.5
Beets - -	20	70	I	9	21.6	14.4	+ 1.5
Potatoes - -	20	63	I	16	15.6	7.6	+ 2.1
<i>Fruits.</i>							
Grapes - -	25	58	0*	17	28.1	7.2	+ 3.9
Bananas - -	35	49	0*	15	35.2	7.7	+ 4.9
Apples - -	25	63	I	12	93.8	10.1	+ 9.3

diem, in others five ounces and in others four ounces. The Indian Jails Committee consider that the issue of this article should in no case exceed five ounces a day, and that it should not exceed four ounces except in the case of dietaries in which the grain ration consists wholly of rice, or in the case of prisoners who are employed on *bona fide*

* Less than half of 1 per cent.

hard labour. The vegetable ration in most provinces in India has been fixed at a minimum of six ounces per head per diem, but in Bombay it is eight ounces; and in view of the importance of the vegetable ration in the maintenance of sound health in a jail they recommend that it should be raised to eight ounces everywhere.

Percentage of Food Expenditure among Skilled Factory Labourers.—

	Japan:	Ireland.	India: (Bombay.)
Rice and other Cereals -	58.74	11.49	34.19
Fish and other Sea Foods -	7.48	0.77	2.81
Meat - - - -	3.53	8.12	3.15
Vegetables and Groceries -	6.74	4.49	2.99

Milk and *ghee* represent 3.09 per cent. of expenditure in the case of the Indian working-men. The total expenditure on meat and fish was 17.4 per cent. in the United Kingdom in 1904.

Cooked and Steamed Rice.—Rice contains a higher proportion of phosphoric acid but a lower proportion of potash and nitrogen than wheat. The husk of rice contains a great deal of silica, and is of little feeding value; but the *kura*, or rice dust, consisting as it does largely of the inner husk and germ of the grain, is richer than rice in feeding value, the average composition of this substance being :

Water - - - -	11 per cent.
Ash - - - -	9 „
Fat - - - -	14 „
Nitrogenous Matter treated as Albuminoids - -	13 „
Fibre - - - -	8 „
Starch - - - -	45 „

Containing a high proportion of oil, *kura* gets rancid by keeping, and therefore it should be used as fresh as possible.

Kinds of Food.	Percentage of Waste such as Bone, Shells, etc.	Percentage of Water.	Percentage of Mineral Matter.	Percentage of Food Material.	Pounds of Material to be Bought to get 4½ ounces of Protein.	Pounds of Material to be Bought to get 18 ounces of Carbohydrate (including Fat)	Index No.: Plus = too much Carbohydrate Minus = too little Carbohydrate (i.e., too much Protein).
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(Fresh Cod)	30	58	I	II	2.5	564.0	-226.0
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CHAPTER IX

PROPERTY AND THE VILLAGE COMMUNITY

Growth of Property Ideas in India.—Land Ownership. —The modern system of the acquisition of wealth depends upon the institution of private property. The history of property is as old as social evolution. Formerly, when man hunted in the forest, the bow and arrow and other weapons were perhaps individually owned, but the animal that was captured or killed belonged to the horde, though the individuals who were foremost in the hunt appropriated a larger proportion of the reward. In the pastoral stage, when families moved with their cattle from place to place, the wearing apparel, the household utensils or the ornaments were privately owned but the cattle belonged to the tribe. Over the home and its belongings and the tract of territory immediately surrounding it, the family very early established its individual ownership in the same way as animals lay claim to dens, lairs or nests, or even to the surrounding preserves. But it was only when agriculture came to be developed that family or individual ownership of land became exclusive. Manu says the land belongs to him who first clears the land, just as the speared deer belongs to the man who first throws that spear. But even when the land is individually owned and operated on, equality is not wholly left behind. Private property in land has, indeed, a long and chequered history behind it. Ownership was first developed as regards house-site and arable land. As population increased, different grades of land in the

settlement were carved into strips, the same individual often possessing sections in different parts of the arable area. This system of intermixed strips is visible in India, China, Japan and Eastern Europe. Wherever the strip system has prevailed it has necessitated a whole body of communal rules to ensure cultivation. The strips are too small to be fenced off. Thus originated what is known as the open-field system, characterised by the planting of large areas in a uniform manner. Each peasant ploughs, harrows, seeds, and harvests his own strip, but he does the same piece of work as his fellow peasants. The village meadow and the pasture lands are regarded as common property, where every peasant has the right to graze his cattle and to cut firewood, and the arable land after the harvesting often reverts to common use. Traces of periodical distribution of arable lands are visible in almost every agricultural country. Under the *mir* system of tenure which appears in many parts of Russia, the peasant does not have permanent ownership of the land he tills. The residuary title is in the village—the peasant group. From time to time the lands are redistributed. Between such redistributions the peasant has nominally complete control of his land, although in practice, on account of the system of intermixed strips above described, he is greatly limited in the choice of crops.

Land Regulations due to Increase of Population.—In the villages of Japan, China, India, and Java there is an elaborate code of rules regarding the ownership and use of land and also regarding the respective rights of families, villagers and outsiders. In many parts of India customary law makes the land inalienable. The tribe, caste, or peasant group has the residuary title. Outsiders have no right in the village pasture lands or forests. The irrigation channels, wells, tanks, and meadows are common property. The system of combined individual and communal

property in the village communities of Southern Asia can still be traced, though it has been obscured in recent times; but there cannot be any doubt that an increasing pressure of the population on the soil and the persistence of the excessive parcelation of land made equalising measures inevitable.

In the village communities it was the *panchayat* which periodically distributed the holdings or permitted the individuals to use a certain portion of the lands. The family was always given the right to the house-site which was inalienable.

Western Village Community Destroyed by Feudalism.
—In Southern Asia, the necessity of collective irrigation, in the case particularly of the wet variety of rice, has been the main binding force of the village communal life. Vestiges of communal tenure within the tribe or village community are scarce in Greece and Rome because their culture developed at an early stage in connexion with town centres surrounded by small plots of intensive cultivation worked by slave labour. At the time of the first contacts between the Romans and the Germanic tribes the annual allotment of village lands was common among many villages, though not universal. The Germans brought the village communalism to the fertile sections of France and England. But the Celts continued to live in scattered farms and homesteads, not so much because they were Celts as because they were poor people living in an inhospitable country. But conquest and expropriation of the peasantry gradually disintegrated the habits of organised village life. In mediaeval Europe the cultivated land was divided into a number of estates. Each estate is in the tenure of a landlord whose obligations and dues are the lowest link in that chain of obligations and rights which is the feudal system. The landlord farms a part of his estate either himself or through his reeve. All the rest of his estate is farmed by his tenants. The dominance of

the landlord was due to his conquest and expropriation. The landlord in Western Europe had the position of owner of common lands, and of such common conveniences as the mill, the oven and the winepress. "The tenants were regarded only as usufructuaries of the wood and the waste and paid him fees for their compulsory use of his mill or bakehouse. And in some countries and districts he was later able so to strengthen himself to their detriment that he absorbed most of the profits of cultivation and they were either squeezed out of existence or debased towards slavery." Conquest disintegrated the village community everywhere. It developed a class of lords of the soil for whom the peasants toil. A class of *servi* grew up which checked the normal development of village communities and introduced feudal forms which, however, are best seen in Europe. In Europe, as towns began to spring up, they attracted the traders as well as the village carpenter and the smith who were first tenant farmers and finally came to be independent artisans. There they received protection and gained prosperity. With the rise of the towns the system of payment in kind gradually disappeared and the payment of wages per week or day came into vogue. In the villages the rental system became common, while the gradual transformation of the ownership of land in fee simple hastened the decline of the village system. Formerly, the most numerous class of tenants were the villeins, who did not own their lands in the sense that they had rights to sell it. They had only a right to use it and might sometimes pass it on to their heirs, and they were forbidden to leave it without the consent of the lord of the manor, who held the title to the land and granted to the holder the right of tillage and imposed certain duties and obligations on the farmers for the privilege of holding and cultivating the soil. When people began to think of the value of things

largely in terms of money, the customary holdings in land with villeins bound to it were superseded by fee simple or lease by definite contract, and instead of the social classes—lords, villeins, free-men and cotters—we had land-owning or renting farmers. The substitution of cash rental for rent in kind contributed to the freedom of both parties. The peasant would grow the crop he liked while the landlord could make his own improvements on the land, which was not feasible on the share system. As the villages ceased to be self-sufficient economic units and began to produce for wider markets, the merchant became an increasingly important element. His rise into social and political prominence accompanied the growth of towns, the decline of serfdom, the free transfer of land as a marketable commodity, the development of the village system and of agriculture for sale or commercial agriculture.

Growth of Land Monopoly in the West.—The discovery of the new world, which poured into Europe a vast quantity of gold and silver, made it easier to pay for commuted services, while the success of sheep-raising and the introduction of new crops and farm machinery led gradually to the rise of the large estates, now increasingly owned by wealthy merchants. But this meant the dispossession of tenants who either became agricultural labourers or went to towns and the gradual encroachment by the land-owner on the common pasture meadow and waste, which the tenants could formerly make use of without any additional payment. Thus, though the new organisation in agriculture led to far greater agricultural efficiency, it encouraged a land monopoly which is fraught with the germs of grave social discontent.

Eastern Village Community Disintegrated by Landlordism.—The village communities in the East also have followed a similar history of decay, though here communal rights in land are still preserved more than

elsewhere. In many parts of India it is not the landlord but the village *panchayat* or assembly of elders which own common lands and irrigation channels and such common conveniences as the tank, the windmill and the oven. Temples and guest-houses are managed by the village assembly and there are elaborate, long-standing customs relating to pasture rights, rights of occupation or sale, and rights of irrigation which have for their object a careful adjustment of claims between the different cultivators with reference to the arable land, the wood and the waste. The feudal chief and farmer of land revenue, however, appeared as elsewhere and upset the peaceful evolution of rural communal life. A new landlordism has been created, which has over-ridden though it has not suppressed village communal rights. Land has become alienable, wages are no longer paid in kind and the rent-free lands hitherto enjoyed by village artisans and labourers are resumed either by the landlord or by the government. The corn-dealer and the middleman have introduced into the village a new economy based on world-wide commerce, and the middle-class and merchants are using agriculture for sale and profit. Thus, though the Eastern peoples are endowed with a great measure of communal instincts and irrigation agriculture has kept alive co-operative habits and even communal property, village communities are disintegrated by the prevalence of landed and financial interests; and the recent creation of a landed aristocracy, and a class of landless labourers who pour into mines, factories and plantations, is fast giving rise to an important social problem.

NOTES


Property and the Stage of Economic Development.—The existence of collective property in steppes and mountain slopes and their co-operative exploitation are a conse-

quence of physical and human conditions, the pasture-lands themselves resulting from the climate and from the slight density of the population. When the population increases, cultivation develops. The highest pasture-grounds remain longest faithful to the type of collective property.

With the introduction of irrigation, natural conditions are modified, but this in turn modifies social conditions. Brunhes entered into a minute study of the watered garden and irrigation canals and ditches of Spain, and pointed out some of the social conclusions which may be drawn from a rather extended and more specialised geographical inquiry. When it is a question of exploiting the water in arid regions, *i.e.*, in districts where water is the chief means of all wealth, men cannot but submit to that effective solidarity which water often imposes upon them. In several cases where the exploited water is furnished to them by a single source (spring, stream, canal or reservoir), and where this exploitation of the water has led them to ease and prosperity, they have clearly understood, or at least definitely accepted, this necessity of the collective union of individual interests. Is it not striking that great drainage enterprises in a marshy region incline men to the same forms of collective organisations as do great works of irrigation in a dry country? The organisation is not always the same; it is not the same in all the oases of the same size, nor even in all the oases of the same geographical type. Sometimes the recognition of the common interest leads to those admirable "hydraulic communities" of Valencia or of Msila; sometimes, as in Egypt or the Panjab to-day, the State is led to co-ordinate the interests of individuals with more or less skill.

Irrigation and Property.—In India, where by irrigation works or otherwise the Government makes waste and unoccupied lands fertile and productive, it is at liberty (and it exercises the power sometimes) to give the cultivators whom it establishes there a mere occupancy right instead of full ownership. This has been done, for instance, in the Chenab and Jamrao colonies, in the Panjab and Sind. The cultivator of the arid zones in the Panjab and Central India is uncertain of the quantity of well-water

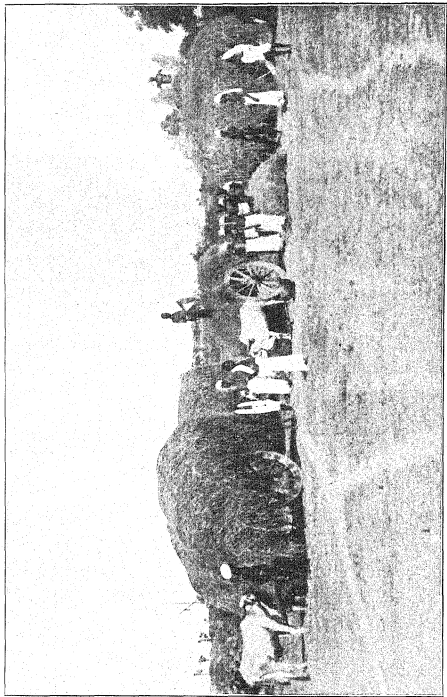
that his neighbours, through arbitrary monopolisation, will allow to reach his field, so he seeks a peaceful situation by means of regulation and an organisation which is the more authoritative the more capricious the water supply. In terraced fields where rice is grown, or in marshy regions in India where the wet variety of rice needs a regular inflow and outflow of water, the irrigation arrangement inclines men to a compact collective organisation. We may thus draw a map of India upon which we may trace lines of demarcation (1) between facts of certain and uncertain rainfall, (2) between facts of vegetation, (3) between facts of technical character (zone of great reservoir dams—the Deccan; or canal zones—the Panjab, Sind and the United Provinces) and (4) between facts of economic or social organisation (the zone of the village communities, where agricultural prosperity is due to the collective discipline in the maintenance of irrigation channels; and the zone of individual enterprise, where there is no real collectivism for the utilisation of water).—(Park and Burgess: *Introduction to the Study of Sociology*.)



CHAPTER X

SHARES IN THE AGRICULTURAL INCOME

Indian Landholding Systems.—It is well known that when the harvest is reaped in the Indian fields it is collected on the threshing-floor and shares are set apart for the village artisans, servants and officials, the field labourers and, lastly, the *raja* or landlord. Of these shares, the *raja's* or landlord's portion is most important. This is called Rent. In India the most extensive system of tenure is peasant-proprietorship. But the peasant has been subject to a rate of land revenue paid to the State which differs in amount in different provinces. Hence arises the form of tenure called the *ryotwari* system. In this the *ryot* is not called a proprietor but an occupant or a land-holder holding his plot of land direct from and paying revenue direct to the Government, which bestows upon itself the title of proprietor in the case of *ryotwari* lands. Thus there is established a sort of divided ownership between the *ryot* and the Government. The *ryot*, however, has power to sell, mortgage or let his lands without the consent of Government and his rights in land are hereditary. But he holds a lease, the period of which is generally thirty years, and the conditions of lease are revised by Government from time to time. The *ryotwari* system prevails largely in Burma, Assam, Sind, Berar, Bombay, Madras and Coorg, over a surveyed area of about 280,000,000 acres. But the most characteristic form of peasant-proprietorship is the system of village communalism, which, as we have



Grain on the threshing floor on the village common, South India.



already seen, has been the type of landholding that is found in many countries and is peculiarly connected with India's social history. In the village community, as this is usually called, the ownership is a joint one, a whole family or group of families having a common ancestry being the owners of the village land, which they sometimes do and sometimes do not cultivate with the other cultivating villagers. The payment of the joint revenue is regulated by shares which are themselves divided by custom in different manners, e.g., shares proportioned to one's place, high or low, in the family tree; equal lots made of different plots of different fertilities, this being called *bhaichara* tenure; by the number of ploughs possessed by the cultivator, a certain fixed area standing for what one yoke of oxen can plough; cultivation according to ability, each family cultivating as much land as it has means to cultivate; cultivation by "divine gift," when the cultivator can give none of the above reasons for cultivating the area he is actually cultivating. In certain tracts in India the cementing principle of village communities is neither kinship nor the conquest and possession of common soil, but certain rights to common land and water which mark them off from neighbouring communities; or, as is sometimes the case in frontier tracts, a common vendetta, the tradition of enmity or tribal raids against a common foe. It is not always that the agnatic relationship is the bond; there is a fiction of kinship induced by the possession of a common *totem* or *eponym*. It is not the tie of actual blood-relationship which necessarily gives the rights of membership in any given village community, but the fact of actual association in that which constitutes its home and centre of activity, viz., the ownership of land. The common interest which attaches to this home tends to produce common customs regulating rights in arable lands and in the village meadow or waste

irrespectively of the religion or caste or tribe to which its various members may belong.

Landlordism and Rent in India.—It is evident that in the village communal system rents must be customary and that a portion of rent exists only in theory, *viz.*, in those cases in which the cultivator and the landlord are the same person. This system prevails largely in the Panjab, the United Provinces and parts of the Central Provinces. But the village communities are not the rule everywhere. There have developed in India large landed estates in which the rights of the peasants vary from sub-proprietary rights down to what may be regarded as the non-rights of the "tenants at will." Such landlord's estates arose from many causes, such as from revenue-farmers being recognised as landlords by the permanent or decennial and other settlements (as in Bengal, Bihar, North Madras, parts of the United Provinces and Bombay, Khots of Konkan); from territorial chiefs whose tributes were converted into revenue (as the Polygars of Madras and Gond chiefs of the Central Provinces); from the grants of *jagirs* for military or other services (as many of the Oudh *talukdars*); from acquisitions through purchase or mortgage of estates by bankers or capitalists. Even in the Panjab there has developed a class of occupancy tenants and inferior owners who exercise practically all the rights of ownership excepting that they pay certain dues to superior landlords. Thus, out of a total cultivated area of 29,000,000 acres in 1918-1919 nearly 15,000,000 acres were cultivated by tenants in the Panjab. The most usual form of rent is a specified portion of the produce raised by the tenant known as *batai*. The division of the crop is determined by custom, and, the method being common to a large tract of country, there is no variety of rents and no competition among the tenants. The rent paid by Government tenants in the Canal colonies usually takes the form of the

land revenue, which is payable by the owners generally, plus an additional *malikana*. This *malikana* is everywhere so small that the Government tenant's power of subletting his land is scarcely less than that of the owner elsewhere; and his economic position is for all practical purposes the same.

Determination of Rent.—In Madras for the *ryotwari* lands the Government rent is calculated after deducting cost of production from the gross produce, such as cost of carriage to market and grain dealers and other middlemen's profits, loss on bad soil which in dry, *i.e.*, unirrigated, lands amounts to as much as 25 per cent., and expenses of cultivation. After these deductions are made the remainder is the net cash produce. Of this the lesser half goes as Government revenue. The danger in this system of rent assessment is of under-estimating the total cost of production, and of ignoring the cultivator's profits, while over-estimating the gross produce and the benefits derived from land improvements.

In Bengal the average proportion of rent to gross produce is only 11 per cent., though there is a wide variation from district to district. In Bombay produce rents commonly amount to half the gross produce. The Saharanpur rules of 1855 laid down that about half the net assets was the Government revenue or rent and the other half the landlord's rent in the North-Western and the Central Provinces.

High Rents Due to High Prices.—Throughout India the rates of rent have been rising after each period of settlement. This increase is due to many causes. In the first place, railways are opening up the interior of the country and the produce of the villages flows out in increased money value into the open Indian and foreign markets. When prices are high peasants make money, and this increases their desire for land. This increasing desire for land and the scarcity of the

supply make high rents. It is in this way that high prices are the cause of high rents.

Among other causes of high prices that we have already considered are the increasing pressure of the population of the soil. This drives agriculture into inferior lands. Formerly these lands did not pay any rent, but the high prices now enable the farmers to rent or purchase them. The cultivation of non-food crops such as jute, cotton, oil-seeds, etc., which have a profitable market abroad, makes the lands available for the cultivation of food scarcer. With the increase of alternative uses of land for the cultivation of produce other than food, land is now worth more than before, and consequently the farmer gets possession of it by offering more rent or purchase price. Lastly, it is the peasant's experience that additional application of labour and capital on the land after a time does not yield in proportion to his expense. With the ever-increasing population in the villages, fresh land becomes scarcer and scarcer, and intensive cultivation is carried very far on fertile land. This naturally brings into play the Law of Diminishing Returns, on account of which the marginal product from the fertile pieces of land falls. Thus there is a tendency for the peasants who were in possession of better lands to seek mediocre lands. These latter make a more vigorous response to skilful treatment than the better lands which have reached the stage of diminishing returns.

Modern Tendencies in Indian Agriculture.—The following tendencies may therefore be detected in the field of Indian agriculture :

(1) The peasant tries to cultivate a large tract by spreading labour and capital thinly till he reaches the limit of efficient management.

(2) The peasant tries to gain possession of the better lands, the less capable farmer remaining on the poorer lands and tending to be crowded out

altogether. Lands near a town, where facilities of purchase of manure or sale of perishable produce in the form of vegetables and fodder are ample, are in great demand.

(3) The peasant increases the quantities of labour and capital on his plot of land till he reaches the point when the marginal product from his land falls to the level of that of the poorest land in cultivation. Ordinarily a peasant would have two working cattle and three young stock. But the cattle is probably bred by the farmer himself, not bought; while very little cattle food is bought by him. Wages are very seldom paid, and then frequently in kind. In the harvest season labour is much in demand and wages run higher. It is estimated that it takes five men one full day to cut and tie an acre of wheat.

(4) The peasant seeks to distribute his land among the uses for which his doses of labour and capital can yield the highest net profit under the prevailing conditions of the market for different varieties of crops.

Indian Rotation of Crops.—In India the rotation of crops on a piece of land has been practised from times immemorial, but this in the main is adapted to the conditions of climate and rainfall and only secondarily to the profitableness of the different crops. The peasant tries to arrange his cropping so as to provide as far as possible work for the whole year. In spite of this, agriculture in India is busy for six months only, though there are days of very active agricultural operations. In the Panjab the *kharif* season is an extremely active growing period, and only the supply of water available limits its more extensive use for crop-growing. Well and canal irrigation leads to more intense cropping. Thus most of the canals in the Panjab are designed for 66 per cent. intensity of cultivation, which is seldom reached in other parts of India. In Egypt an intensity of over 200 per cent.

is generally attained, and that country has the highest record in the world as regards average yield of cotton. The following rotations are in vogue in the Lower Chenab Canal :

- | | | |
|--|---------|---------------------|
| 1. Wheat, <i>Toria</i> , Cotton | - | 3 crops in 3 years. |
| 2. Wheat, Wheat, <i>Toria</i> ,
Cotton | - - - 4 | " 4 " |
| 3. Wheat, Maize, <i>Senji</i> , Cotton | 4 | " 3 " |
| 4. Maize, <i>Senji</i> , Cotton | - 3 | " 2 " |
| 5. Wheat, Maize, <i>Senji</i> , Sugar-
cane | - - - 4 | " 3 " |
| 6. <i>Chari-guara</i> (mixture),
<i>Gram</i> , Cotton | - - 3 | " 2 " |
| 7. Wheat, Cotton | - - 2 | " 2 " |
| 8. <i>Gram</i> and Wheat | - - 2 | " 2 " |

Economics of Cropping.—The use of land for various crops is ultimately governed by two kinds of factors, physical and economic. The rotation of crops is necessary to preserve the soil from exhaustion. But different rotations are applicable for different kinds of land, since certain lands are particularly suited for certain crops but not so well for others. The economic factors may be analysed into a comparison of the relative advantages of different crops. This depends upon the expenses of cultivation, the amounts of bullock and manual labour, manure and water expressed in money, as well as the rent and the income from the sale of the crop. Some crops cost more labour both by men and by bullocks or more manure and water, while others occupy the land much longer and may not yield straw or fodder. All these are taken into consideration by a scientific farmer in order to compute the cost of growing different crops. In India much of this calculation is left to tradition, and this is a by no means negligible cause of the stagnation of our agriculture.

NOTES

The Abuses of *Batai*.—"Theoretically, *Batai* is the most equitable method of division; it is, however, for many reasons, cumbersome, and, further, it lends itself to abuse. It is, for instance, inapplicable in the case of a crop such as cotton, in which the harvest period extends over several months, for it means holding up the disposal of the earlier pickings until the entire crop is picked, or the repeated subdivision of each picking. A variation of the *Batai* system thus arose in which the standing crop was estimated and the proportion due to the landlord calculated on the basis of that estimate. This system, known as *Kankut*, is originally less equitable, for it throws the risk of wrong estimation entirely on the tenant. Nevertheless, its advantage to the tenant in avoiding the delay involved in actual weighments is sufficient as long as equality of freedom in estimating the return exists. It is only when such freedom ceases to exist that this method of payment becomes, like *Batai*, inequitable. With the increase of population from decade to decade, an ever-increasing body of prospective tenants arose, and competition for land has thus developed simultaneously with the liberation of the landlord from the restraining influence of the need for defence. Under such circumstances the inevitable result has been that which we find, an ever-increasing rental until the share left to the tenant is barely sufficient to supply the essential needs of himself and family. Under pressure of this competition even the apparently simple and equitable system of *Batai* has been twisted to favour the landlord, as a study of the additional imposts of *kharch dhala*, *nazar*, *khakiuna*, *biaha*, *wazan kashi* and so on would show. Even *Kankut* came under abuse; for, if the tenant disputed the landlord's estimate of the crop, the latter's agent could postpone his visit until the harvest season was long past and the crop had suffered material damage."—(Leake: *Agricultural Practice and Economics in the United Provinces, India*, pp. 131-2.)

The Relation between the Growth of Population and Agriculture in India.—In India, where the population is

predominantly agricultural, the economic aspect of density resolves itself into the question of the relation between the population and the productivity of the land. Attempts were made in the Census of 1911 to correlate the distribution and growth of the population with the cultivable and cultivated area and the out-turn of different kinds of crops. It seems clear that while the extent of the cultivable area is a factor in determining the distribution and expansion of an agricultural population, the proportion of the cultivable area which is actually cultivated, on the other hand, is the result, not the cause, of the growth of the population. Correlations between the population and the area cultivated, therefore, are chiefly of interest as a means of measuring the enterprise of the people, the productivity of the soil under their efforts and their standard of living. They are not, so long as the whole cultivable area is not fully cultivated, a clue to the pressure of population or to its potential expansion. Except within very wide limits, correlations between population and cultivable area are rendered nugatory by the vagueness of the term "cultivable area," since land at any particular time classed as unculturable is continually being opened out to cultivation by irrigation, as in the Panjab and United Provinces, or by the cutting back of forest areas, as in the central tracts of the country and elsewhere. Again, the capacity of land to support population depends, apart from its extent, on its scientific treatment and economic organisation. And agricultural methods, choice of crops, distribution of holdings, system of tenure are factors which have varying influence in different localities and must be studied in connexion with local conditions and problems. Economic pressure may exist at any degree of density. It is responsible for a large amount of the unrest in the tribal areas of the North-West Frontier, where the crude density is a ridiculously low figure; and Dr. Mann has shown in his discussion of the conditions of typical villages in the Bombay Deccan that pressure exists in tracts where the actual density is not much above the average, that it keeps part of the population at a very low standard of living, and is only partially relieved by the flow of the population into the industrial cities of the Presidency. The examination of the agricultural statistics

for Bengal has shown how varying capacity of the soil, under climatic conditions varying from place to place, enables very different densities of population to find support in different parts of the Province, and how it is possible for a population over 1,000 persons to the square mile in parts of Eastern Bengal to go on increasing rapidly, while a population less than half as dense in some rural districts in Western Bengal remains stationary or decreases. With the progress of civilisation and the improvement of communications, the standard of living adjusts itself to variations from place to place in the capacity for production whether in agriculture or industry.—(*Census of India, 1921.*)



CHAPTER XI

BALANCE-SHEET FOR CULTIVATORS

The Peasant's Capital.—The capital that is used in agriculture ordinarily consists of bullocks, ploughs and other tillage implements, as well as seeds and manures. The peasant usually owns these things instead of hiring them, so that the distinction between wages and interest is obscured. Moreover, the bullocks are often bred in the peasant's homestead and are not purchased. It is also difficult to estimate the cost of maintenance of the bullocks, for which no fodder is bought. The bullocks are turned out into the fields in the hot weather to gather a precarious subsistence from the withered growth that remains. There are different types of cattle which vary in their working power, while their value lies not only in the bullock as a worker but also in the cow as a supplier of milk. The animal's dung is usually used as manure, or again as fuel, and complicates the estimation. The bullocks are not worked throughout the year. During ploughing, and especially in times when a scant rainfall is distributed over a short period, the plough cattle have to work very hard, while during the harvest season their work is comparatively light. During some months when agricultural work is dull, the cattle are used for the cart which does business in the nearest market. The ploughs, harrows, horse-hoes, rollers, etc., are bought ; but they are repaired from time to time by the village blacksmith and carpenter who receive shares of grain at each harvest.

The Peasant's Interest.—It is clear that the bullocks

and the tools are used by the cultivator to enable him to add to his output, over and above what he could produce without them, an amount more than enough to cover the price which he pays for them. Whatever the agricultural capital brings him in excess of the price which the peasant pays for them, and that alone, is interest.

Wages of Labour.—The peasant also employs hired labourers and has to pay them wages. Very often such wages are paid in kind. In Northern India, for instance, the Chamars are by far the most important class of labourers. Besides their function as artisans they perform a considerable part of the agricultural labour. They supply *begar*, repair leather, remove dead cattle, supply shoes to all the members of the family when needed, assist in the reaping of the harvest and clear the fields before ploughing, one Chamar being present daily to assist at the reaping of the harvest. His wages are recorded in a village as follows: One tenth of the grain crop. On a daughter's marriage from 8 as. to Rs. 5 and food for three days; on a son's marriage from 8 as. to R. 1 and food. The skin of dead sheep and goats goes to the Chamar of the family, one-thirteenth part of the flesh of cow, ox, calf, sheep and goats and one-nineteenth part of the flesh of buffalo go to the Chuhra (sweeper), the remainder being the Chamar's share. When any buffalo, bull or other cattle dies, belonging to a stranger or unowned, the skin is shared by all the Chamars of the village, and of the flesh one-thirteenth, or one-nineteenth, as above, goes to the Chuhra of the village and the remainder is given to all the Chamars of the village.

The calculation becomes somewhat complicated because of the payment of wages in kind, which again differs in different localities.

Accounts of the Farm.—The total combined product of the labourers and the peasant proprietor who

employs them, and who also is one of them, and of the tools of agriculture must cover not only the wages of the labourers hired and the other costs of cultivation, including risk, etc., but also the original cost of the bullocks and the tillage implements. A careful management of the farm, with accurate accounting, will enable the peasant to set aside each year a certain sum for maintenance (and also for depreciation, which is to set aside each year that year's share of the original cost), besides the interest which must be paid whether there is a crop failure or not, if the peasant has borrowed his agricultural capital. If the peasant rent land and pay rent, the rent must be paid whether the farmer has left to himself any remuneration for his own labour or not. The farm labourer's wages must be paid whether in cash or in kind, unless there is complete bankruptcy of the peasant.

The Peasant's Risk.—Thus, the peasant takes the whole burden of the innumerable risks of agriculture. The peasant stands between the landlord, the capitalist and the hired labourer, and so long as he is able to maintain his solvency the latter are protected. It is thus doubtful whether half the peasants of this or any other country make any profits of cultivation at all after deducting wages for their own labour, rent for their own land, and interest on their own capital. It is clear that the poorer class of peasants, whose holdings are small, do not make profits at all in spite of the most unremitting industry.

Exploiters of the Peasant.—Agriculture in the hands of petty proprietors becomes still more unremunerative in regions of precarious rainfall. The moneylender or the grain-dealer also eats a large portion of the profits of agriculture, and the ignorant peasant is completely at the mercy of the village moneylender and shop-keeper, from whom he has to borrow for the very necessities of life from harvest to harvest.

Specimen Balance-Sheets of Indian Peasants.—But the Indian peasant does not ordinarily estimate his gains and losses. He is ignorant of his economic position. We give below two specimen accounts of expenses and profits of cultivation from two typical fertile areas of India—one in the district of Trichinopoly and the other in a district in Oudh :

TRICHINOPOLY

	Rs.	as.	p.
Manure, 16 cart loads of cattle dung -	2	0	0
Cart hire- - - - -	2	0	0
Manure, goat - - - - -	4	0	0
Ploughing charges, first crop - -	3	8	0
Labour charges for <i>pallan</i> - - -	10	0	0
Transplantation - - - - -	2	4	0
Ploughing charges, second crop - -	6	0	0
Labour charges - - - - -	10	0	0
Transplantation - - - - -	2	8	0
Total - - - - -	42	4	0

All accounts relate to 1 acre of *pannai* area.

An acre of single crop land will produce under normal conditions 20 *kalams* of paddy (1 *kalam* = 24 Madras measures = about 60 lbs. of paddy).

This paddy, otherwise called the *kar*, at the time of harvest ordinarily sells at Rs. 1. 10.

	Rs.	as.	p.
Thus the total income from the first crop is - - - - -	32	8	0
The second crop may produce about 25 <i>kalams</i> , each <i>kalam</i> of this paddy <i>samba</i> will sell for Rs. 2 -	50	0	0
Total income from 2 crops	82	8	0

	Rs. as.	Rs. as. p.
Govt. revenue on 1 acre— <i>Kist</i>	15 0	
Water cess - - -	1 2	
	<hr/>	16 2 0
Other extra charges, local - - -	- - -	2 0 0
Total - - -	- - -	<hr/> 18 2 0
Cultivation expenses - - -	- - -	42 4 0
Total costs - - -	- - -	<hr/> <hr/> 60 6 0

Hence the total cost of cultivation for 1 acre of wet land to a cultivator who works completely with hired labour and with no implements of his own is - - - 60 6 0

And the net income from 1 acre of wet land (for a double crop) for a year will be only - - - 22 2 0

UNAO, OUDH

	Rs. as. p.
Seeds, 1 <i>maund</i> - - -	5 0 0
Hire of bullocks for ploughing - -	[8 0 0*]
Labour Cost :	
Sowing and ploughing - -	3 0 0
Labour for building <i>bunds</i> for irrigation - - -	0 8 0
Irrigation (4 times ; one pair of oxen for six days at a time), <i>i.e.</i> , 24 days - - -	[24 0 0*]
Wages of 3 men for 24 days - -	[18 0 0*]
Wages for harvesting paid in wheat 16 srs. - - -	2 0 0
Wages for threshing paid in wheat 12 srs. - - -	1 8 0
Rent - - -	<hr/> 12 0 0
Total [excluding the items marked *, which represent the peasant's own labour].	<hr/> <hr/> 24 0 0

BALANCE-SHEET FOR CULTIVATORS 91

Produce :

12 <i>maunds</i> of wheat	-	-	-	24	0	0
<i>Bhusa</i> , 8 packs	-	-	-	8	0	0
Mustard oil seeds, 20 srs.	-	-	-	4	0	0
Total	-	-	-	36	0	0

The net profit per *bigha* is Rs. 12 ; but if the peasant's own labour is fairly valued, as shown, he is working at a loss.

The following is given as an average balance sheet for wheat by Mann and Kanitkar on the basis of investigations in a Deccan village :

<i>Expenditure—</i>	With Hired Labour.			With Cultivator's own Labour.		
	Rs.	as.	p.	Rs.	as.	p.
Seed (30 lbs.) - - -	2	8	0	2	8	0
Manure - - -	1	8	0	1	8	0
Labour Cost (animals and men) :						
Ploughing - - -	4	2	0	5	12	0
Harrowing - - -	2	0	0			
Sowing and covering -	1	8	0			
Other operations, harvesting, threshing, etc. - - -	2	0	0			
Assessment - - -	1	2	0	1	2	0
Total - - -	14	12	0	10	14	0

<i>Income :</i>						
Value of :				Rs.	as.	p.
Wheat grain (240 lbs. at 15 lbs. per Rupee) - - -	-	-	-	16	0	0
Safflower seed (30 lbs. at 30 lbs. per Rupee) - - -	-	-	-	1	0	0
2 Wheat straw - - -	-	-	-	1	0	0
Total - - -	-	-	-	18	0	0

This leaves a net profit of Rs. 7.2 per acre for a cultivating farmer, or Rs. 3.4 per acre for a capitalist employer of labour. It must be remembered in this case, however, that the profit with wheat is a cash receipt since in an ordinary year it is not used largely for food and hence is sold.

Insolvent Villages.—Two villages were selected at random by Mann and Kanitkar, which were typical of thousands of Deccan villages, and the balance sheet for families in the villages stood thus :

Villages Taken	INCOME				EXPENDITURE				BALANCE OF ARREARS
	From Land	From other Sources	From Trees	Total	Interest on Debt	Personal Family Expenditure	Govt. Assessment	Total	
1. No. of the families of the village, 147 -	13,802	8,546	615	24,963	6,755	32,221	1,581	40,557	15,954
2. No. of families of the village, 103 -	23,110	—	1,009	24,119	2,592	22,551	1,660	26,803	2,682

These economic inquiries into the condition of the people in villages which represent many hundreds in the precarious tract of the Central Bombay Deccan, and which are of a purely rural character, are disheartening. If a good season comes, in spite of everything the people do fairly well, from their own standard. But good seasons only occur from twice to four times in ten years and an average seems to leave the village under-fed, more in debt than ever, and apparently less capable than ever of obtaining, with the present population and the present methods of cultivation, a real economic independence. This state of things is emphasised by the recent rise of prices. A famine increases indebtedness by nearly 50 per cent., apart from its effects due to under-nutrition and

disease. Some of this is perhaps paid off at an early date, but much is probably permanent, either in its present or in some modified form. As a result of the economic stress, there is a general emigration to the cities and other large centres, without those who go in any way severing their connexion with the villagers. The usual plan is for the people to go for four to eight months in the year, excepting in a few cases when they remain permanently. We thus witness the beginnings of a gradual industrialisation of a community and of the change from a peasant-proprietorship to a peasant proletariat which everywhere have reacted very unfavourably upon the social life of agricultural peoples.

NOTE

Agricultural Indebtedness.—The following table gives us the area of land that is mortgaged and the price of land in the Panjab :

Year	Percentage of Cultivated Area under Mortgage	Area out of every 10,000 acres of Cultivated Land which was			Average Price of Cultivated Land per acre in Rs.
		Mortgaged	Redeemed	Sold	
1911	11·9	69	88	44	129
1912	12·0	74	91	54	123
1913	11·7	79	96	66	107
1914	11·5	88	102	44	249
1915	11·6	83	87	49	180
1916	11·5	82	76	38	216
1917	11·4	78	67	35	227
1918	10·9	69	69	35	252
1919	10·9	72	90	49	184
1920	10·7	90	120	49	275
Mean	11·4	78	89	46	194

CHAPTER XII

RISE OF "BIG BUSINESS"

Barter in the Indian Village.—In the self-sufficing economy of the villages the community anticipates its own wants, and production can be controlled by the village. The village producers meet the wants of the consumers, and any disparity of reciprocal dues and obligations is corrected by the communal organisation of industry. The machinery by which this adjustment of needs and services takes place is barter. In many rural markets barter still obtains. Bulls are exchanged in some districts of South India. With the expansion of economic life the disadvantages of barter become manifest. In the first place, men want different things simultaneously, and there may not be other men who want to dispose of things that others need. Secondly, there are small and big things, and these are not always divisible into requisite quantities which might be transferable.

Kinds and Uses of Money.—Hence has arisen the use of money everywhere. Corn, cattle and sheep, each one in its turn, has been the medium of exchange of different peoples. In Japan as late as 1868 there were in circulation rice notes representing definite quantities of rice and used in the payment of taxes, which were levied chiefly in kind. In the rural economy of India corn is still a measure of value. Its great advantages over other articles are that it is easily divisible even to a grain, that it represents an article of daily household consumption and that it fluctuates as a standard of measurement with agri-

cultural prosperity or depression. Even now in the villages of India corn is in common circulation to a much greater extent than is realised, and is divided into very small standardised measures for the payment of village artisans and servants, and even of taxes and debts during harvest times. During a year of bumper harvest the measure of value increases in amount. This is because the stalk of grain increases in length in a prosperous season ; and, since the corn tied by different lengths of straw measures village payments, there is an automatic adjustment of the standard of payment. Thus, customary dues of village artisans and even repayments of grain loans to village moneylenders are somewhat adjusted to the general level of economic living. Now, the lack of stability and permanence of value in the case of corn are fatal to its adaptability as a store of value. Gold and silver, because of the great value possessed by relatively small quantities, are excellent commodities for the storage of value and hence especially fitted to be used as money. The value of gold and silver fluctuates less than that of any other commodity owing to their durability. The trader or the middleman who comes from a distant country to the village with the raw materials of village handicrafts might exchange them for the wares of the artisan, but if he does not deal in a particular narrow line of trade he cannot do without gold and silver. Similarly, a grocer's shop which deals in various wares such as cloth, salt, sugar, oil, matches, etc., which the village cannot produce and which have to be bought from the merchant in the city, cannot accept grain from its customers. The merchant was thus already dominant in that phase of industry which preceded the factory system, serving as a bridge between the grower and the manufacturer on the one hand, and between the manufacturer and the consumer on the other. Thus the merchant has sent his broker to the villages, who has given advances

to the peasants to make sure of his raw materials, such as jute or cotton or oil-seeds. He stores goods until he can sell them, whether it be grain in elevators or cotton cloth in warehouses, or tinsel in village shops.

The Peasant's Markets.—Three main types of business are noticeable. First, there is the dealer in raw materials, who sends his agents or middlemen to the villages to buy wheat, rice, cotton or jute, and who sells to a producing firm. Secondly, there is the wholesaler of finished goods in the city who sells to a retailer. Lastly, there is the retailer in the village who sells direct to the consumer. There is in India very little trade in agricultural produce, and what there is is carried on in towns only. The retail dealer usually deals in salt, sugar, kerosene oil and other things which may not be produced in the village. He also stores a part of the grain he has purchased for local retail sale. But the vast majority of the cultivators depend on the weekly market for the supply of any commodity which they do not grow or make themselves. Each market supplies the petty needs of the group of villages for which it caters. It is self-contained and does not compete with a neighbouring market, and the days are so arranged that the same men may, as they often do, go on from the one market to another, purchasing and selling. Local agricultural produce is brought and sold generally by the grower and forest produce by the hillman; so also pots, coarse cloth, baskets, etc., by the maker; groceries, cloth and other imported articles are usually brought by the dealer; cattle, more often than not, by an agent; fish by the fisherman; oil by the oil-presser. The financial resources of the grain-dealer are limited, and the greater part of his purchases will probably be passed on to more substantial middlemen. The relations of these two classes of middlemen differ: in some cases the grain-dealer takes advances from the

larger local merchant and acts as his agent ; in some cases the latter acts as the agent of the former and stores and disposes of his grain for a commission ; in other cases the former sells outright to the latter. In any case the cultivator takes no part and gets none of the profits that are made out of the marketing of his produce. The risks of the local trade are shouldered by the different classes of middlemen and the profits of it are shared by them ; when the grain travels farther afield the trade passes into the hands of a set of more substantial middlemen whose resources and whole outlook are larger and whose market is the whole of India.¹ All these classes of people co-operate in bringing together the different links in the chain of production and consumption. But, although the advantage of co-operation is mutual, the disadvantage of a failure to co-operate is usually very much greater for one party than for another. Thus, the agents of the mercantile firm suffer a slight temporary inconvenience by refusing the crops which the peasant offers for sale, whereas the peasant starves. The grain-dealer's advance of agricultural capital easily may become an instrument of exploitation and the peasant be reduced to the position of a drudge when a large portion of the profits of cultivation are appropriated by the dealer along with the interest on his advances. Similarly, the wholesaler has more economic power than the retailer, because the retailers are scattered throughout the country and unorganised. Thus, the latter accept the prices charged by the wholesale shops. The village retailers' greed and profiteering are notorious ; yet peasants have to accept any prices they offer. But the peasant does not remain as ignorant of market conditions as before. Cotton markets, for instance, in the Deccan are highly organised and generally well managed. The price in Bombay is notified by telegraph and rapidly becomes known

¹ See *Census Report of Bihar and Orissa*, 1921.

to all sellers and purchasers, the wealthier cultivators frequently hold up their stocks for long periods in the hope of a rise in the market, and the official forecast of the American crop is understood and discussed. Throughout India, however, the chief need is for some agency which will enable the cultivator to sell his crop at a time of the year other than that immediately succeeding the harvest, when there is almost invariably a considerable fall in price.

Large-scale Production and Specialised Industry.—In the field of manufactures there is a similar integration and co-operation of labour established in the course of economic development. We may distinguish three main tendencies. With the growth of communications and the widening of markets there is a tendency for production to be conducted on a larger and ever larger scale, for the large industry to supersede the small. This has been the result of specialisation and standardisation of the work of both men and of machines, which secures economies not available in the small establishment. Such economies are connected with production as well as marketing. The rise of the large-scale industry has been accompanied by the tendency to a specialisation of businesses, which, instead of competing with the large business over the whole range of products turned out by the latter, specialise on one small stage or process only. Such a tendency was already visible in the case even of cottage production, which specialises on one small process, say on the manufacture of yarn for the handloom weavers or the manufacture of crude brass for bell-metal workers. Throughout the world, as a result of international division of labour, there is a tendency to a complete differentiation of the Western manufacturer and the extra-Western grower. Even in the case of manufactures the less advanced countries sometimes produce only crude articles, which are transformed into finished products in Western fac-

ories ; while among the more advanced countries in Western Europe we sometimes find countries specialising themselves in one or few stages or processes of making final goods.

Integration of Industries.—Secondly, there is a tendency towards the integration, not merely of the different stages of the same process, but also of manufacture in general with extractive industries in general, *e.g.*, between coal-mining and iron and steel industries, between soap manufacture and the supply of animal and vegetable oils, between cotton manufacture and the supply of raw cotton. The vital necessity for securing raw materials leads the Western capitalists to explore and exploit undeveloped regions all over the world. This is bringing about gradually the economic education of the backward peoples. The different parts of the world are brought closer together in mutual co-operation and interdependence, so that a good or bad harvest in India, Russia or Canada reflects itself in the movement of prices in the markets of London, Paris or Berlin.

Business Combination.—Lastly, there is a tendency of industrial establishments to combine with one another and carry on their business in common. All these aggravate the tendency, inherent in "big business," for the control of industry to become concentrated in few hands, and for increasing the disparity of economic power among the parties.

Money and Credit.—Throughout the increasing and ever-ramifying process of integration of agriculture, manufacture and trade, monetary instruments play an important *rôle*. Money is the instrumentality through which energy is distributed in the different industries engaged in the production of consumer's goods. It is also the means by which the energy of society is apportioned between the production of "consumption goods" and that of "capital goods." In the village it is barter which brings about the

equilibrium of social energy. Any fresh distribution of the energy of society in different lines of industry and consumption meets with resistance from custom. In modern industrial society this distribution of energy is left under the direction of private business men in search of profits, who anticipate the demand and adjust the supply accordingly. Gradually there has been a differentiation of the functions between the specialised industrialist and the financier, even as the former had differentiated himself from the merchant in the machine age. It is the financier who grapples intelligently with the problem of the right direction of the flow of productive resources into the several channels demanding their use. In the present age the joint stock company rather than the one-man business or the private partnership is the predominant form of industrial organisation. The machinery of joint stock provides an avenue by which the small capitalist can become a part owner of the properties acquired in the name of the company, and this avenue is made broader by the existence of three devices; *viz.*, the limitation of liability, the grading of industrial securities, and the emergence of organised markets in which these securities can be bought and sold. The shareholder who has paid for his share has no further liability for the debts of the company. In the second place, the shares of the company are distinguished between preference and ordinary shares, so that the investor within limits can shoulder as much or as little of the risks of business as he chooses. Lastly, the organised stock exchange, where the securities of all the leading companies can be freely dealt in, affords the investor a reasonable expectation of being able to get rid of his securities quickly and without heavy loss when he wants to, and thereby encourages many people to invest who otherwise would be unwilling to do so. In the villages money is a store of value. In modern industrial society this function of money

is quite subsidiary. Instead of hanging our gold and silver about our wives and children we invest money in a bank and receive interest, or buy shares and stocks in the exchange and receive dividends. In either case society at any given time does not utilise all of its wages and profits for the purchase of consumer's goods, but reserves funds in banking institutions for the use of capitalists who are seeking to extend existing businesses or start new ones. In a similar way society secures the prosecution of governmental functions and enterprises by diverting funds, through taxation and bond issues, from individuals, who otherwise would be spending them for ordinary purposes of consumption, to the Government.

National and International Credit.—Now, the Government's creditor is native or foreign. If the creditor is native, his security, though substantial, might be put to severe strain in times of emergency. All the continental States which were parties to the late war have repudiated all or most of their internal debt. Russia has plainly repudiated the whole. Others have repudiated the greater part by depreciating their currency so ruthlessly that the currency notes in which the creditors are repaid are often not worth as much as the paper on which they are printed. The repudiation of external debt is a more serious matter. The Russians repudiated their external debt, and their creditors caused a number of civil wars, culminating in a terrible famine. The Allies have withheld the repayment of debt to England. Now the payment of external debt is made not so much by the transfer of metals as by that of commodities. After the war, much of the external debt of different countries is being repaid without the flow of bullion at all. Thus, the external creditor's security rests on the solid foundation of a country's necessity of international trade. If a country wishes to trade in the future at all, it cannot do so without respecting its foreign

obligations. Indeed, the distribution of the world's available funds for productive enterprises is determined by the credit of the nations, and unless a nation is either destitute or possessed of overwhelming military power it tries to keep up its credit abroad. Thus, credit plays an important *rôle* in the apportionment of productive energy, not merely within a country but also among different nations. The rivalry and conflict of peoples cannot overpower the economic activities of the world, which govern themselves with all the liberty, elasticity and variety of freedom. The normal economic system thus works itself. As a recent writer puts it: "Over the whole range of human activity and human need, supply is adjusted to demand and production to consumption, by a process that is automatic, elastic and responsive. . . . This intricate system has been built and is maintained by the work of thousands of men, of keen but limited vision, each working within his own limited sphere, each normally seeing and knowing only his own and the immediately adjacent territory." Combination, the integration of raw materials and marketing processes, the financial penetration of industry, all in their way and their degree increase the number and size of the patches of ground which are brought within the vision and to some extent within the control of a single intelligence. But even these patches are still small and scattered in comparison with the whole field of economic life. In the main, the co-ordination of the efforts of the isolated business leaders is left to the play of impalpable forces, views and knowledge and habit and faith, and of those twin elementals, the Laws of Supply and Demand.

Future of World-economy.—A Carnegie, a Pierpoint Morgan, a Rothschild, an Inchcape or a Stinnes, by establishing control over a vast field that embraces manufacture, trade, transport and extractive industries, might direct the channels of the flow of labour

and capital, and exercise a dominant influence over the fortunes of nations in war and peace. But these isolated personalities, however great, cannot have the large vision, foresight and broad sympathy by whose aid they could succeed in envisaging the needs and resources of the world, with such diverse races and regions, and weld them together for the purposes of a harmonious and progressive world-economy. Hence, the play of the forces of competition acting under the impulse of self-interest being inadequate and imperfect, the solution of the problem of adjustment between needs and resources may probably be looked for in the organisation of the world into an international body like the League of Nations.

NOTE

Factories in India.—The total number of establishments returned in India was 15,606, employing 2,681,125 persons (1,994,314 males and 686,811 females). The distribution of the working population in the main classes is given on page 104.

Taking the individual industries, the most important are the tea gardens with 28 per cent. of the workers; the cotton industry with 16 per cent.; jute with 12 per cent.; coal with 7 per cent.; railway works, 4 per cent.; bricks and tiles, 3 per cent.; vegetable oils and petroleum, 2 per cent.; printing presses, 2 per cent. Of the total number of 15,606 establishments, 677 are owned by Government, 3,292 by registered companies and 11,637 by private persons. The Government-owned concerns are mostly railway and engineering workshops and other concerns, such as brick and tile factories connected with the construction of roads and building, and printing presses. The tea and rubber plantations are mostly the property of companies. The collieries are mostly company-owned, but of the 42 manganese mines of the Central Provinces half are owned by companies and half by private persons. Of the 392 cotton-ginning mills in Bombay 333 are privately owned, but of the cotton-weaving mills 129 out

of 345 are owned by companies. Similarly the jute presses are mostly private, while 60 out of the 62 jute mills of Bengal are company-owned. In the whole number of establishments the skilled workmen form about one-fourth

Industrial Class			Number in 000's	Percentage
All Industries	-	-	2,681	100
I. Growing of Special Products	-	-	821	30.6
II. Mines	-	-	267	10.0
III. Quarries of hard rock	-	-	27	1.0
IV. Textiles and connected Industries	-	-	773	28.8
V. Leather, etc., Industries	-	-	14	.5
VI. Wood, etc., Industries	-	-	33	1.2
VII. Metal Industries	-	-	170	6.3
VIII. Glass and Earthenware Industries	-	-	82	3.1
IX. Industries connected with Chemical Products	-	-	109	4.1
X. Food Industries	-	-	110	4.1
XI. Industries of Dress	-	-	12	.4
XII. Furniture Industries	-	-	7	.3
XIII. Industries connected with Building	-	-	30	1.1
XIV. Construction of Means of Transportation and Communication	-	-	155	5.8
XV. Production, application and transmission of Physical Forces	-	-	15	.6
XVI. Industries of Luxury	-	-	56	2.1

and the unskilled about three-fourths of the total labour. The proportions of the skilled differ considerably in the different industries, being as low as 2 per cent. in the tea, coffee and rubber, etc., plantations, much higher (43 per cent.) in the textiles and over one-half in the metal and

machinery workshops. The proportion of women is about one to every twelve men among the skilled, and the number of children is negligible, a few being returned from the cotton mills and collieries. Among the ordinary labourers, however, there is one adult woman to every two men and one child to every seven adults. In the larger industries, which are comparable to those of the 1911 schedule, the increase in the skilled workmen has been 26 per cent. and in the unskilled 21 per cent., a natural difference, due, as in the case of the supervising staff, to the progress made in such industries as mines, textiles and metal-working.

CHAPTER XIII

PRICES AND WAGES

Rise of Prices in India.—The greatest economic event of modern India is the rise of prices. Ever since the building of the railways and development of commerce with the West the prices of food-stuffs and manufactured goods have risen higher and higher. From about the middle of the last century, when the means of communication were opening India to herself and to the outside world, the tendency towards a rise of prices became manifest. It continued to be progressive, until, during and after the European War, prices have risen so enormously as to cause a good deal of distress and unrest.

How Price is Determined.—Now, the prices of commodities rise or fall over short or over long periods. In a fish market the prices of fish vary from day to day. Ordinarily there are a number of buyers and a number of sellers, and sellers and buyers compete with each other to secure the most favourable terms for themselves. This is known as the "higgling of the market." In a very small market the price will depend on the scarcity of the commodity and the wealth of the buyer. In the case of one seller and several buyers, for instance, it is the richer buyer, who can offer a higher price, that determines its price. Now, a rupee is worth less to a rich man than to a poor man. The utility of money that he might forsake for fish is less for him than it is for a poor man—its marginal utility is less. Thus when a commodity is scarce, *i.e.*, when its supply is not adjusted to the

demand in a local or short-period market, its price depends largely on the wealth of the buyer.

Normal Price.—With the growth of the means of communications markets are widened. There is a greater adjustment on the part of the sellers to the effective demands for a commodity ; while among the buyers, where they deal in masses of commodities and where the sum devoted to a particular purchase is only a fraction of their wealth, the difference in the value of money may be neglected. In this case there is an equilibrium of supply and demand and exchange oscillates above or below a central point that may be called normal price. But this is largely hypothetical, because there is no society without changes in population, amount of capital, methods of production or social demand. Thus, normal price may be compared to the level of an estuary, where the tide ebbs and flows and the level is slowly changing ; market value is like the surface when agitated by the winds.

Market Value.—Now, in the case of normal price the equilibrium between demand and supply tends to adjust itself to the cost of production, because in a long period purchasers can afford to wait—as when, for instance, they know that an improvement in methods of production is cheapening prices ; while the sellers can get the time for adjusting their supply to the new cost. On the other hand, if the fall in cost is rapid and the influence of the old stocks great, the actual market price may not quite reach the cost of production. It is true that the market price will move in the direction of the new cost ; but, under progressive conditions, it will never reach it.

Economic Forces Illustrated by the Indian Cloth Market.—To illustrate the forces of demand and supply in wide or limited markets we may consider the prices of cloths. Formerly the peasant used to employ the local weaver and gave him shares of grain at each harvest ; but now he has a wider choice. He may

either purchase cloths made on the village hand-loom or those imported from Manchester or Japan. These cloths, which are supplied to India in increasing quantities, have widened the cloth market by competition and lowered the prices of cloth. Such cloths are cheaper because they are made on a large scale by skilled labour, by the power-loom and from yarn which is often much superior to that spun or woven in the Indian village. Thus fine-spun cloths are mainly supplied by Manchester or Japanese mills at prices much lower than those which can be offered by our country weavers. There are also the cloths manufactured in the Indian mills, which have competed with village cloths for the last three decades. The ascendancy of the foreign manufacturers, which continued long unabated, and well-nigh crippled hand-loom-weaving in India in the last century, was suddenly checked as a result of the war. During the war the rise in the price of American cotton, the rise of wages and the general cost of production, as well as shipping freights and insurance charges, have all contributed to raise the prices of imported cloths. The prices of gold and silver at the same time were fluctuating as a result of the sudden demand for bullion in the transactions of war, and this led to speculation. Thus the prices of cloth in India rose very high and the Banya or Marwari cloth-dealers who enjoyed a monopoly in the import of cotton-piece goods took advantage of the situation and began to make large profits. Thus, there was a good deal of cloth distress in many parts of India. The village hand-looms could not meet the demand, while the cotton mills of Bombay were not able to increase their output to the necessary extent during the war for lack of machinery. At the same time the yarn manufacturers increased the price of yarn, and even withheld their goods from the market for purposes of large future gains. Thus the cloth market, for the time being, became a very

limited market, and the price of cloth depended on its scarcity and on what the buyer could offer.

Unfortunately, at the same time, the peasant who purchased his cloth by the money available from the sale of his produce found that the world market for his crops had contracted as a result of the war. Thus, during some months of the war the peasant's jute or cotton, which formerly fetched such high prices in outside markets, was rotting in the fields while he was insufficiently clothed. Later, however, the demand for his produce revived in the West, although the price did not rise to the same extent as that of imported cotton-piece goods.

Coubrough has drawn a curve, representing the basis of calculation for the total value of Indian mill-produced goods. It gives the annual average price of piece goods in annas per yard. The variations are :

1909-10	-	-	-	-	2.3
1910-11	-	-	-	-	2.4
1911-12	-	-	-	-	2.5
1912-13	-	-	-	-	2.6
1913-14	-	-	-	-	2.7
1914-15	-	-	-	-	2.5
1915-16	-	-	-	-	2.5
1916-17	-	-	-	-	3.3
1917-18	-	-	-	-	4.5
1918-19	-	-	-	-	6.0
1919-20	-	-	-	-	6.7
1920-21	-	-	-	-	7.7

A comparison of prices in 1913 and in the following years explains the cloth distress and consequent unrest among the labourers.

Food-stuff Prices in India.—Such conditions, however, are abnormal, and we ought, therefore, to distinguish between short periods and long period conditions of supply and demand. Let us now consider, for

instance, the prices of food-stuffs in India. In the beginning of the eighteenth century grain was very cheap. Even during the period 1813-16, when it was dearest in England, grain sold very cheaply in the Indian markets. During that period transportation was imperfect and no export trade in wheat from India to Europe was possible. Prices fluctuated violently before 1850, and they came to some semblance of steadiness after 1860. After 1860 the prices were very high and the rise has progressed till during the last ten years it has become enormous.

It is obvious that one of the causes of the rise of prices is the enlargement of the market for grain. Even now harvest prices in the villages are much lower in plentiful seasons than normal prices, because villages and districts have unequal facilities for transport. With the development of easy communication, which brings prices to a general level, India has become a grain-exporting country and competes in the world-market. The population of the world has increased enormously and with this there has been a greater demand in other countries for Indian food-stuffs. There also has been manifest a higher standard of living throughout the civilised world, which means an increase in the demand for commodities. Even in India there has been a great increase in population which has not been accompanied by a proportionate increase in the area of the cultivation of food crops. Thus, the increasing pressure of population on the land has maintained high prices.

Money Inflation.—The rise of prices also has been contributed to by the supersession of barter by money economy and at the same time an increase in the medium of exchange. India's money now consists not only of coins, but also of currency notes, bills, cheques and drafts. There has been a great development of credit in recent years, which has increased the purchasing power of the public and not only has

facilitated trade but also has increased its volume and intensity. In recent times there has been an enormous inflation of currency everywhere, and in India the sudden increase of paper money took place during a period when there was a depression in trade as a sequel of the war.

High Prices Caused by the War.—Thus some of the causes of high prices were general and in operation throughout the world, such as inflation of the paper currency during the war due to necessity of creating additional credit, the fall in output of production due to diversion of productive resources for war purposes, as well as rise of wages and of general costs of production. Others were especially applicable to India.

Who Benefit by High Prices?—To the peasant proprietors high prices are a blessing, especially when they do not employ money-hired labour and when they hold land at fixed money rents. In those parts of India where the Land Revenue is fixed by a periodical settlement a general rise in prices benefits the cultivator. Where he has borrowed and repays to the moneylender in money he is also the gainer because he pays back less in commodities than when he had taken the loan. Nor does the moneylender increase the interest charged on loans in the village as a result of the rise of prices of articles or of money in the great centres. This is because the rate of interest in the villages is usually so high that it can hardly rise further, and is hence independent of moderate rises in the value of money elsewhere. But, wherever the peasant is too dependent upon the grain-dealer who gives him advances, it is the latter who profits by high prices. He receives in kind, which during the period of high prices would be worth more than its equivalent in money. Again, he buys crops as soon as or even before the harvest is reaped, when prices are at their lowest, and his profits vary directly with the ignorance and lack of easy credit of the farmer.

From isolated cases of grain-profiteering there gradually develops a system of exploitation under which the economic position of the peasant improves but little, in spite of high prices. Thus, the trading class as a whole reaps most of the benefit of high prices, not merely by controlling the rural credit and thereby hypothecating the crops, as it were, and selling them in outside markets ; but also by charging high prices for such necessities of life as salt, *ghee*, sugar, cloth, etc., for the internal markets. A poor middle-class which does not depend on trade suffers more from the rise in prices through the increased cost of living. Thus, the salaried officials whose wages are fixed are given compensation allowance or bonuses as a result of higher cost of living. The wage-earners in mills and factories are given some increase in wages ; but, being disorganised, the rise in wages does not keep pace with the rise in prices. Thus it is that the landless labourers who are congesting the industrial cities, mining centres and plantations undoubtedly suffer most from the rise in prices ; this class is at once an effect of economic unsettlement and a cause of social danger. Some are tied to a village or district where there is no great demand for labour excepting at harvest-time, or perhaps they are prevented by caste from undertaking any work that is offered. It is in such cases that the hardship is greatest, especially near towns where the system of paying wages in grain and produce has gone out of vogue.

Wages, Nominal and Real.—Economists draw a distinction between Nominal and Real Wages. By “nominal” or money wages is meant the actual cash which a man earns for a period of time. By “real” wages is meant the amount of commodities which a man can buy with his money wages. In making comparisons between the economic conditions of different periods, in districts or regions, real wages must be taken. Mr. K. L. Datta in his *Report on the*

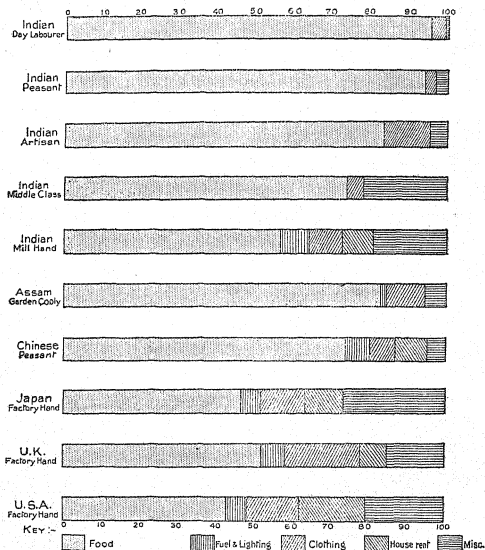
Enquiry into the Rise of Prices in India selected the period from 1890 to 1894 as his basic or standard period for the purpose of estimating the fluctuations in price levels. In reviewing rises in wages in subsequent years, he observes that, in rural areas in India, wages of agricultural labourers and village artisans have risen enormously as measured by purchasing power. About 1912 they were about 38 per cent. above the level of the standard period. The rise in the wages of industrial labour had not been so large. Nominal wages had increased in every case, but the rise was not in all cases as great as the rise in prices. The following would represent a comparative statement showing nominal and real wages of rural agricultural labourers and labourers in tea-gardens in Assam.

The index numbers are given relative to an index number of 100 for the period from 1890 to 1894 :

	NOMINAL WAGES					
	1890 to 1894	1895	1900	1905	1910	1912
1. Agricultural Labourers -	100	105	125	147	170	189
2. Tea-Garden Labourers -	100	106	103	106	117	120

	REAL WAGES				
	1895 to 1899	1900 to 1904	1905 to 1909	1910	1912
1. Agricultural Labourers -	- 103	120	123	134	138
2. Tea-Garden Labourers -	- 101	96	90	98	95

Thus the coolies in tea-gardens appear to be in the worse position, their real wages having fallen 5 per cent. below those in the basic period ; though they



The Effect of Poverty on Expenditure.
Relation of Expenditure on Food to other items in different Countries.

have some concessions of a limited character, such as land for cultivating and in some cases rice at a rate lower than the market rate.

Assam Coolie's Wages and the Cost of Living.—

The committee appointed to inquire into labour conditions in Assam found that the percentage of the rise in family earnings in the case of tea-garden labourers for the whole province in 1922 as compared with 1914 is 19·2. On the other hand, the price of the necessities of life rose in the same period by 39 per cent. 139·95 represents the approximate difference in the cost of living of the tea-garden coolie in 1922 as compared with 1914.

The items of expenditure of a labourer's family are tabulated in what are called family budgets. As a rule a tea-garden coolie brings his family with him to the garden. In industries like the jute mills and coal mines the labourer frequently leaves his family in his native village and remits money to them or returns home after some months with his savings. It is estimated that the average coolie family consists of one working woman, about three-tenths of a working child, about one non-working child and two-tenths of an adult non-working dependent. Thus the subsidiary occupations of the man, particularly rice cultivation, and the household duties of the woman, are responsible for a considerable percentage of the absentees in the daily muster-roll. Adopting the standard of an average working family as consisting of one working man, one working woman, and three-tenths of a working child, the rise of earnings has not kept pace with the increase in the family budgets. In other words, the rise in real wages is appreciably less than the rise in nominal wages. The purchasing power of the present level of wages is less than in 1914. The Report of the Board of Revenue of the United Provinces for 1921 states: "The demand for labour was again in excess of the supply and wages rose in consequence proportionately to the increase in the cost of living, so that labourers did not suffer." The Assam Labour Inquiry Committee remarked: "It can

hardly be a matter of surprise if, under these favourable conditions, labourers from the United Provinces should regard the attractions offered on many estates in Assam as insufficient and should hesitate to leave their home districts." In the estates themselves the coolie's standard of living has been lowered of late years.

World-wide Changes and the Coolie.—But the conditions which enhanced the price of food-stuffs and cloth and ultimately led to a lowering of the standard of life due to a lack of adjustment between wages and cost of living of the coolie, were not local and limited in their operation. The foreign exchange began to rise in 1918 and reached its highest point in 1920. The rise necessarily increased the cost of producing and manufacturing tea, and it was accompanied by a great fall in tea prices in the European markets. The two causes depressed the tea industry in India. With the restoration of normal conditions the tea industry, it is expected, will be in a position to enable the coolie to regain, if not to raise, the standard of living which he had attained when the cost of living was less. We thus find that the changes of demand and supply in the international market affect the daily life and welfare of humble coolies in the tea-gardens of Assam.

CHAPTER XIV

THE UNECONOMICAL HOLDING

Indian Income Statistics.—It is very difficult to estimate accurately the average economic position of a people. In India, in particular, statistics are uncertain and do not yield definite information in this respect. The average annual income per head in India was estimated to be Rs. 27 and Rs. 30 in 1880 and 1901 respectively. In 1911 the correct figures on the same method would have been Rs. 50. A somewhat more elaborate method gave for 1911 the figure of nearly Rs. 80. In arriving at these figures the total estimated value of agricultural produce is worked out, and on the assumption that the income of agriculturists and non-agriculturists is distributed between the two classes in proportion to their numbers, the average income so-called per head of total population is determined. Thus, if the total agricultural produce or income so-called in 1911 was Rs. 876 crores, and if the non-agricultural population was three-eighths of the agricultural population, then non-agricultural income so-called is three-eighths of Rs. 876 crores, i.e., Rs. 328 crores. The total income so-called is Rs. 876 crores + Rs. 328 crores = Rs. 1,204 crores : this divided by the total population gives a *per capita* result of Rs. 49.6 or nearly Rs. 50.

From a careful estimate of the agricultural income of the Madras Presidency in 1921 we arrive at an average income per head of a little over Rs. 100. During the last few decades the rupee greatly declined in value, so that the purchasing power of Rs. 100 was

only 40 per cent. greater than that of Rs. 30 in 1899. Assuming that the income of Rs. 100 per head per annum of the Madras Presidency is true for the rest of India, the increase over the 1899 figure does not really mean much progress.

23. The Peasant and the Moneylender.—More than 90 per cent. of the total expenditure of the agriculturists in India is accounted for by staple food, rent and clothing. Very little is available for recreation and medicine; none whatsoever for education. Amongst all classes in India the expenditure for the social and religious ceremonies and caste dinners is excessive and is the cause of a large proportion of family indebtedness. In every agricultural country debts are incurred by the peasants for meeting the expenses of cultivation. These are usually paid off after harvesting. It is roughly estimated that more than three-fourths of the agricultural population of India are embarrassed with debt, and that nearly two-thirds of the debt are secured by mortgage of land. The village moneylender's calling is thus the most important in India. Beside him the professional class is inconsiderable, the industrial class is insignificant, even trade and commerce take the second place. Mr. Darling has shown that the Panjab is dominated by the moneylender to an extent unknown in any other province. In the whole of India, excluding this province, the proportion of moneylenders to total population is 1:367; here it is 1:100. Although the population of the Panjab is only one-eleventh of the whole, one-fourth of all moneylenders found in British India reside and work here.

Moneylending in Agricultural India.—The rates of interest charged by the *Shah* or *Mahajan* range usually from 25 to 300 per cent. In addition to charging exorbitant rates he extorts money under various pretexts and takes from the cultivator bonds on which heavy stamp duties are payable. On the other

hand, the borrower's need is irrepressible. Either he will starve or he will give up his land if he cannot obtain an advance to tide him over his emergency. He has, again, nothing in his possession excepting his small farm which can serve as a security. It is true that he is proverbially honest and straightforward, but the moneylender wants a more substantial guarantee. There are different kinds of loans: grain loans for food; seed loans for cultivation, usually on sawai (one and one-fourth) and deorha (one and one-half) rates; advances made by middlemen with a view to securing the crops; loans on security of ornaments, cattle and poultry loans, etc., all of which are adapted to special rural needs and conditions. The reasons which compel the cultivator to borrow are diverse. Some of these are enumerated below:

(1) *Untimely Revenue Demands*.—The demand for land revenue by a fixed date, which sometimes does not conform to the harvest season. This is particularly true of those tracts of India which are not permanently settled. In the latter the amount of revenue has been fixed in perpetuity and is payable by the landlord as distinguished from the actual cultivator. The landlord usually arranges the *kists* of payment in a way suitable to his tenants. Elsewhere the duty of assessing the revenue of a district is entrusted to Settlement Officers. Under Temporary Settlements 25 to 50 per cent. of the rental in the case of *zemindari* land may be regarded as the demand, and this demand cannot be adjusted promptly, by the machinery of Government, to the seasonal fluctuations of crop production.

(2) *Agricultural Losses*.—The loss of agricultural capital caused by deaths of cattle. In India the mortality amongst cattle is most terrible, and there is no attempt at segregation of cattle suffering from infectious diseases. The number of veterinary surgeons is exceedingly limited and adequate measures

of vaccination and ameliorative treatment cannot be undertaken. Moreover, the religious prejudices of the people prevent drastic measures being taken against any infected village, while the village common lands spread the infection to the cattle of neighbouring villages.

(3) *Easier Credit*.—Mr. Datta in his *Enquiry on the Rise of Prices* writes: "With increased wealth in the country there are now more persons with money to lend than before, and they compete with one another in offering loans to the cultivators at lower rates of interest. Owing to an increase in prices, land has considerably risen in value throughout India, and now forms ample security for a much larger loan in comparison with what it would have secured twenty-five years ago; and this increased credit the ryot is far too prone to utilise for foolish and improvident purposes." The temptation is too strong for him to resist borrowing, the dangers of which are unrealised. This applies especially to the case of cultivators with small holdings.

(4) *Legal Difficulties*.—Many observers ascribe indebtedness also to the changes in the system of inheritance and legal procedure introduced by the British Government. According to the *Famine Commission Report*, 1880, a rigid and elaborate legal system has too often proved only an additional instrument of oppression in the hands of the more wealthy or better instructed litigants, and an additional cause of ruin to the impoverished agriculturists.

The enormous amount of capital borrowed by the peasant or sunk in the purchase or mortgage of land does not therefore benefit the land itself. The only forms of permanent improvement left by the ancestors of the present population are found in the existence of wells and of a few small embankments to prevent floods, in a certain amount of levelling and in the existence of trees which afford timber and shade. Exceptions to this may be found in the hills, where

the pressure on resources has led to the laborious terracing of otherwise uncultivable hillsides, and in the canal colonies of the Panjab and other irrigated tracts where a more enlightened spirit is manifest.¹ In Japan great labour is spent in providing dykes and ditches for drainage and irrigation in connexion with the tiny rice-fields, which are levelled and made secure in their places by terracing. The irrigation systems furnish water so abundantly as to force the largest possible crop formation, and the drainage canals and flood-controlling dykes allow the cultivation of large areas, which otherwise would be either periodically or permanently inundated. Such improvements in the land have been seen in India only in Eastern Bengal and in the Cauvery Delta.

(5) *Improvidence*.—There are certain other circumstances which cause poverty and lead to indebtedness, and which have their origin in the habits of the people themselves. In India the limited nature of crops, which entail work only at certain periods of the year, and the abundant harvest, have produced the habit of wasting long periods in idleness and encouraged thriftlessness. In England, hard times, famines and the sufferings during the Napoleonic wars, as well as the stress during the Industrial Revolution, rendered the practice of thrift a necessity. The rise of the middle-class and of popular banking in France and Germany was similarly associated with the inculcation of thrift as a national virtue. In India there are no institutions like Banks and Credit Societies in the villages which would systematically encourage the deposit of small savings. The Postal Savings Bank has never appealed to the peasants, while the Co-operative Credit Societies are too few. The Hindu joint-family system is incompatible with any special disadvantages to the indolent and the incompetent who feed on the earnings of the more efficient and

¹ *Panjab Census Report, 1921, p. 20.*

successful members. The series of seasonal feasts and religious observances, as well as caste dinners on auspicious occasions, have stimulated family extravagance. All these have played an important part in fostering improvidence; while the facile doctrine of a mysterious, inexorable fate has been the refuge of the weak-spirited and feeble-minded.

(6) *Fragmentary Holdings*.—Nor are the laws of succession and the land system without their effects on poverty and indebtedness. The Indian law of inheritance, under which property is subdivided at each succession, encourages the fragmentation of holdings. Intensely fragmented plots become uneconomical, and lead to a waste of agricultural capital. In some provinces it is quite usual to find an owner of no more than three acres, with three or more separate fields scattered about an area of two or three square miles: it requires little imagination to picture the waste of effort, and the difficulties as to trespassing and rights of way connected with a holding of this type. In Japan, the average farm consists of about three acres. In the United States, the average farm contains 148 acres.

Holdings of Uneconomic Size in India.—The recent census gives the following figures showing the relation between the number of cultivators (workers) and the acreage cultivated:

RELATIVE SIZE OF HOLDINGS

Province	No. of acres Cultivated per 100 ordinary Cultivators
Assam - - - - -	296
Bengal - - - - -	312
Bihar and Orissa - - - - -	309
Bombay - - - - -	1,215
Central Provinces and Berar - - - - -	848
Madras - - - - -	491
N.W.F. Provinces - - - - -	1,122
Panjab - - - - -	918
United Provinces - - - - -	251

The number of farm servants and field labourers per 100 cultivators is given below, but the accuracy of the figures is doubtful :

PROPORTION OF FARM LABOURERS TO FARMERS

Province	No. of Farm Servants and Field Labourers per 100 Cultivators	
	1911	1921
Assam - - - - -	3	3
Bengal - - - - -	18	19
Bihar and Orissa - - - - -	47	28
Bombay - - - - -	67	41
Burma - - - - -	27	29
Central Provinces and Berar - - - - -	86	82
Madras - - - - -	55	53
Panjab - - - - -	15	12
United Provinces - - - - -	22	16

In Bengal, there are 2.215 acres per worker in agriculture, including cultivator, farm servant, field-labourer and grower of special products. In the *ryotwari* areas of Madras the average size of a holding is estimated as not exceeding eight cultivated acres, while in the more thickly populated areas of Bihar, under the *zamindari* system, the tenant's holding averages less than half an acre. In the Panjab the average holding is between six and fifteen acres ; the actual figure depends on whether holdings of less than one acre, and holdings attached to houses, etc., are omitted. In some districts the average comes down to one-fourth and even one-eighth of an acre in area. It is in such figures that the chief explanation of the poverty of the Indian cultivator lies. With holdings so minute there is not enough work for the cultivator,

who has little or nothing to do most of the year. Agricultural indebtedness is at once the cause and effect of the division of the holding. The cultivator working on tiny plots has to borrow, while the creditor takes whatever portion of the land he can secure. Even the very rights which the cultivator has in his land, and which it has been the object of agrarian legislation like the Bengal Tenancy Act or the Panjab Land Alienation Act to preserve to him, stand in the way of an adjustment between the supply and demand for labour; for the cultivator does not sacrifice these rights and go in search of employment in the industrial centres excepting in the last extremity.

Non-cultivating Landholders.—Not merely the moneylenders but also the new classes of under-proprietors intercept a large portion of the profits of agriculture. The British land administration has led to the emergence of new classes of people into the status of peasant proprietors. In the Panjab alone the number of persons living on income from rent of agricultural lands has increased from 626,000 in 1911 to 1,008,000 in 1921. These now share what formerly had belonged exclusively to the cultivator, and leave but little surplus. Very often such classes do not cultivate the land themselves, or are thriftless. The tendency of the non-agriculturists to take possession of the agriculturists' land is to a certain extent increasing in every province, and this no doubt is a matter of serious anxiety. A further leakage of the normal profits of agriculture is due to the absence of co-operative marketing: the grain-broker or dealer who advances loans often sells the crops at prices more than one and a half times the rate he offers to the cultivator. Thus, the whole question of poverty and agricultural indebtedness is bound up with such difficult problems as the reform of the land and revenue systems, the consolidation of economic holdings, the increase of thrift and facilities for saving,

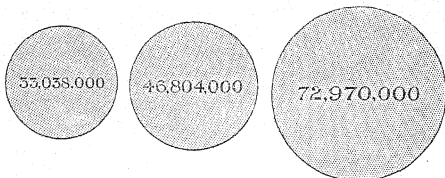
the introduction of scientific methods and organisation of labour in agriculture, and finally the law of diminishing returns.

Leakages in Indian Agriculture.—Agriculture is carried on with the most primitive tools. The peasant

POSSIBILITIES OF ENLARGED PRODUCTION UNDER IMPROVED SEEDS IN TONS.

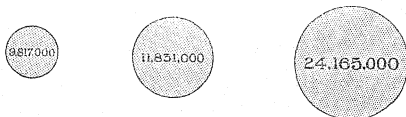
RICE.

Present total yield in the whole of India.	Possible yield with improved seeds.	Yield calculated at the rate at which U.S.A. produces with the help of manures.
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WHEAT.

Present total yield in India.	Possible yield with improved seeds.	Yield calculated at the rate at which U.K. produces with the help of manures.
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maintains himself by rude and comparatively unprofitable agriculture at a low level of existence. He uses bad and infertile seeds, does the ploughing with the primitive one-handed plough, sows and reaps by hand, and, excepting in the densely populated regions, knows little about the rotation of crops and seldom uses artificial manures. Pests, animal and vegetable, work

incalculable havoc. Experiments show that a rat alone consumes six pounds of grain a year and, since the total rat population is eight hundred millions, the loss caused to India by this animal per year is about Rs. 22 crores. The breed of the cattle deteriorates, while epidemics lead to a serious decline in numbers of the total live stock in the country. Such are a few of the causes which react unfavourably upon cultivation. Formerly the farm manure was carefully stored in pits and utilised in the fields, but even this the cultivator now wastes. In Japan, every morning the peasants carry the night-soil and even the urine to their fields for manuring purposes. In India, even the cow-dung does not go back to the land, but is often used as fuel; while the oil-cake is exported abroad by local shopkeepers. There is also a considerable leakage of labour in every direction. When the crop is harvested the peasant himself goes to the market to sell it; there is thus a vast wastage of labour. In many of the lower castes the women work in the fields or in connexion with the fish industry, at gardening, or do the marketing; but religious prejudices supervene and prevent the women-folk of the higher grades from doing any useful profitable work out of doors. Nearly half the year agriculture is idle. In Eastern Bengal the time-table of the jute cultivator shows extremely hard work for three months and idleness for nine months of the year. If he grows rice as well he adds a month and a half's work in July and August.

Time-saving in Agriculture.—Adoption of advanced intensive cultivation increases the amount of labour per unit of area; but, unless pushed very far, it also increases output per man. The solution is not to be found in crowding men on the land or in reducing the area under cultivation, but in occupying those prolonged periods which the farmer under his present system spends in idleness.

Multiple Cropping in Japan and Bengal.—In Japan great care is taken to get the largest possible use of the land during the season when conditions of moisture and temperature encourage luxurious growth. Quick-maturing crops are selected; and, in order that no land-time be wasted, some crop which may be transplanted is started in a forcing-bed in time to be set out between the rows as soon as the first crop begins to mature. With individual fertilising it becomes well rooted and is ready for its most important growth by the time the earlier crop has been harvested and the land worked.¹ The extent of multiple cropping is the chief cause of the disproportion in density of population between Eastern and Western Bengal.

	Value of the Gross Produce per square mile of the total Area (Midnapur 500)	Persons per square mile Cultivated
Bankura Subdivision -	450	793
Midnapore - - -	500	857
Nadia - - -	658	814
Faridpur - - -	1,134	1,202
Mymensingh - - -	1,082	1,162
Dacca - - -	1,279	1,541
Noakhali - - -	1,453	1,566
Bakarganj - - -	1,087	1,080

Much can be done in this direction throughout India by the introduction of crops which require labour in the off-seasons; if scientific rotation and artificial manuring were introduced more autumn crops could be grown without prejudice to the spring crop; the catch crops which are grown near towns

¹ See Buchanan: "The Rural Economy of Japan," *Quarterly Journal of Economics*, August, 1923.

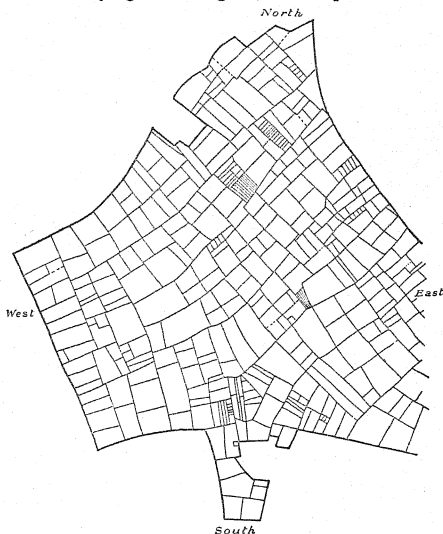
after the spring crop has been harvested could be encouraged, and permanent improvements could be carried out in the off-seasons which could economise effort in the busy periods. Thus the amount of daily labour which could be saved and the increase in area commanded by a well which could be caused by the construction of permanent waterproof channels are enormous. Capital could be employed in planting orange groves and fruit orchards, which after they were established would employ less but more continuous labour than rice or wheat cultivation, and yet could yield a greater return.¹

Declining Indian Village and its Rescue.—There is no supplementary occupation either for the peasant or for his family. Much of the idle or surplus labour might be utilised for market-gardening, fruit-growing, poultry-keeping, hand-spinning and weaving and other cottage industries ; but the waste continues and with this poverty increases. Formerly the traditions of social and agricultural co-operation were very strong. The combination of peasants for sowing, ploughing, harvesting, digging wells or irrigation channels, building embankments and dams, etc., is still met with ; but such traditions are decaying. The village now lacks the solidarity which, formerly devoted to economic management in a scheme of self-sufficing rural economy, was of incalculable benefit. The system of co-operative credit has now been introduced into the Indian village. Slowly but surely the evils of usury and of under-capitalised agriculture will be grappled. Thrift will be taught and gradually the increase of agricultural capital will bring within reach of the cultivator the improved seed, the improved implements and the improved methods which are necessary if poverty is to be expelled from this land.

Reorganisation on Co-operative Lines.—In Japan there are agricultural partnerships and brotherhoods

¹ *Panjab Census Report*, 1921, Chapter I.

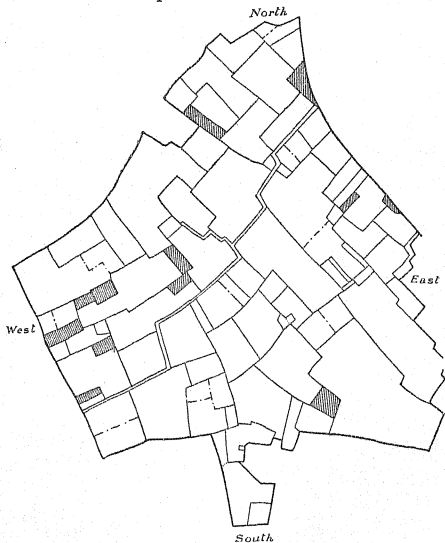
of the most diverse kinds : societies for the improvement of seeds and manures, for killing insects and extirpating weeds, for the insurance and breeding of cattle, for jungle clearing, for the improvement of



Map of Holdings in Goraya Village, Phillaur Tahsil, Jullundur District, Panjab, before Consolidation.—(From *The Land of the Five Rivers*.)

village education and sanitation, for the prevention of malaria, for nursing the sick and the aged, etc. The Japanese law permits a certain majority of owners in a village to apply for forcible reallocation and "re-

stripping" of the land, each man receiving a consolidated block in one or two places, approximately equivalent in area and value to the fields which he surrendered. Co-operative consolidation by consent



Map of Holdings in Goraya Village, Panjab, after Consolidation.
The scattered holding of the recalcitrant who refused to consolidate is shown shaded.

has been effected in about a hundred Panjab villages where the new allotment of holdings is sometimes subject to reconsideration after four years, but in

recently registered societies has been permanent from the first. Broadly speaking, the reduction in the number of fields is from either ten or five to one, the increase of area is in inverse ratio, and the rent of leased holdings is found to be proportionately enhanced.¹ Egypt has passed the Five Feddan Law to check subdivision beyond the size of the economic holding. In India, especially in the densely populated areas, the holdings become so small that not merely are they insufficient for the maintenance of the peasant's family, but also the open, scattered fields prevent the introduction of new methods of agriculture and even of new crops, because the cattle of the village of which the lands are fallow would be straying all over the fields. The break-up of the old rural communalism in India, which has not yet been accompanied by any new conceptions of social solidarity, has made the sufferings of poverty more intense. Either the old communal habits have now to be adapted to new social and agricultural needs, or in the modern co-operative society our aim should be to adapt, in a manner suitable to modern conditions, the organisation of the joint family, caste and village community. In China the agnatic rural clan serves as a mutual defence or mutual aid association, and its supervision over rural agriculture has prevented the growth of capitalistic interests which disintegrate small farming. Indeed, throughout the East man has been trained to realise that his group—family, clan, caste, guild or village community—is indispensable to him; if he misses his footing and falls into the whirlpool, it alone will throw him a life-line. It is to the organisation of these for new social endeavours that we might more easily look forward for solving some of the difficult problems of poverty than to the adoption of new institutions and methods which take a long time to become popular and effective in conservative countries.

¹ Strickland : *Introduction to Co-operation in India*, p. 71.

Improvements for the Indian Small Farmer.—Large farming on capitalistic lines is unsuitable for India, where, on account of the pressure of a dense population on the soil, the pastoral industries cannot be as important as they are in Western Europe or in the sparsely populated regions of the New World. There will be seen, therefore, two movements in Indian rural economy in the near future: first, a gradual development of scientific farming, which means that unskilled farmers will be driven into less fertile lands and ultimately out of the field of agriculture. On account of the small size of the holdings and the necessity to keep them in the finest possible condition, mechanically driven implements will be unsuitable for reaping, ploughing and preparation of the land. In Japan, rice-fields are worked as in India by men and women wallowing in the mud. Rice is weeded and the ground or mud stirred about three times during the summer. Much of this is done with the naked hand. Harvesting and threshing make slow, laborious tasks for muscles alone. A foreign observer remarks: "American agricultural machinery would destroy more than it would produce. The dykes and ditches could never stand it, and in the tiny fields too much turning would destroy the whole crop. With horses and wheels on the land the second crops would be impossible. European and American agricultural methods would no more work on a Japanese farm than Japanese methods would work on a European or American farm. Each system doubtless has defects, which might be eliminated; but, on the whole, each is pretty well adapted to its environment." These remarks apply also to the Indian system of farming. In the main, there is little to hope for in the direction of lightening field labours, although a great increase in the yield of land is possible by the improvement of levelling, drainage and irrigation and use of natural and artificial fertilisers as has been the case in Japan.

Thus, mechanical power will be introduced in India, first as a substitute for cattle-power in threshing and irrigating in the hot weather when the available supply of fodder is at its lowest. In India the demand for cattle-power is at its highest when its efficiency is lowest. In cane-growing regions, where there is a possible opening for running power-crushing mills, or in well-irrigated tracts where tube wells have a great future, cheap oil engines might profitably be introduced. Wherever there is hard work in the hot weather and the *rabi* crop is important, the demand for agricultural power must thus be supplied by mechanically driven instruments which will take a form adapted to irrigating, threshing or preparing the crop, thus freeing the cattle for ploughing and preparation of the soil.

Problem of the Landless Labourer.—Another tendency in our rural economy will be represented by the gradual movement of the landless labourers to immense stretches of land which are badly cultivated on account of absentee landlordism or absence of full proprietary rights of the peasants. On the one hand, unscientific farming, especially when holdings become smaller and smaller, will lead to an increase of the peasant proletariat when cultivation will be giving diminishing returns. The presence of a landless population, on the other hand, cheapens labour relatively to capital and delays the introduction of improved tools and implements. It is true that certain types of agriculture depend for their success on a large supply of hand labour, *e.g.*, rice, mulberry, jute, which therefore have found a suitable home in the monsoon regions having a dense population; while dairying, poultry-keeping and fruit-growing are agricultural industries which respond more to the human factor than to capital. But, in the present condition of Indian agriculture, the introduction of scientific methods and the investment of capital are retarded by the abundant supply

of cheap and efficient agricultural labour. Thus, the improvement of the small-farming economy by the adoption of scientific agriculture and by co-operative organisation and the redistribution of land rights in the interests of cultivation must go together, for each will fail without the other, resulting in more agricultural depression and discontent.

NOTE

Food-producing Powers of Land.—The following table shows the food-producing powers of an acre of land under different crops :¹

Crop	Food Value per lb. (Calories)	Pounds per acre Good Yield	Calories per acre	Ratio to Wheat as Basis (frac- tions omitted) per cent.
Entire Wheat Flour	1,660	1,800	2,988,000	100
Beef - - -	1,130	200	226,000	7
Mutton - - -	1,275	250	318,750	11
Whole Milk - - -	325	4,000	1,300,000	43
Corn Meal - - -	1,550	3,600	5,580,000	186
Oatmeal - - -	1,860	1,800	3,348,000	112
Rice - - -	1,630	2,400	3,912,000	13
Rye Meal or Flour	1,630	1,800	2,934,000	98
Beans - - -	1,590	2,400	3,816,000	129
Potatoes - - -	325	24,000	7,800,000	260
Sweet Potatoes	480	30,000	14,400,000	482

¹ The table is reproduced from Carver's *Principles of Rural Economics*.

CHAPTER XV

AGRICULTURAL LABOUR

Distribution of Wealth.—The economic distribution of wealth is to be judged from the broad division of population into agricultural, industrial, commercial, professional and other classes. A closer examination would require in the first place the differentiation of industrial workers from agricultural labourers (farm hands, etc.) and general low-grade labourers of the miscellaneous and casual type who are on the margin of work and life; and secondly, the isolation of the fixed wage-earners from the rest. It is to the landless classes and the receivers of fixed incomes that the vicissitudes of the times bring most hardship.

Fixed Wage-earners of India.—The professions, representing more or less the affluent section of the community, form a microscopic minority. The fixed wage-earners also form a very small section. The following table shows their number in 1911 and in 1921:

	1911	1921	Variation per cent.
Farm servants and field labourers -	41,246,335	37,924,917	-8.1
Labourers and workmen un- specified -	8,273,650	9,300,105	+12.4

Hired labourers in India, unlike those on the farms of North and North-West Europe, are not whole-time professional labourers but part-time day labourers. They usually own a little land themselves, and would like more, but there is also a growing class of landless labourers whose employment is uncertain.

Decline in Number of Agricultural Labourers.—Every circumstance which has weakened the economic position of the small-holder has increased the supply of agricultural labourers—the loss of common rights in the rural economy, the disuse of collective enterprise, the subdivision of holdings, free mortgaging and transfer of land and the decline of cottage industries. The growth of population in this century has been so great and the holdings have been reduced so much in size that they have often become uneconomical, compelling the peasants to supplement the proceeds of their holdings by outside work, or to sell their lands to middlemen or to more prosperous peasants. It is noteworthy that the populations on the margin of life engaged in occupations that entail heavy physical but little mental energy are endowed with larger families than the higher and the more intellectual sections of society. In a normal decade, with no epidemics or other disturbing factors, such sections of the community may be expected to increase faster than the rest. The last two decades have been unusual, and the mortality, which is always the heaviest from these lower orders, has been particularly heavy. Mr. S. V. Mukerjee, who in his *Baroda Census Report* discusses this question, shows that the number of agricultural labourers has been progressively decreasing since 1901; but, on the other hand, the number of cultivators and receivers of rent from agricultural land (with their dependents) has progressively increased from 970,675 in 1911 to 1,058,182 in 1921. The *Panjab Census Report* similarly records an increase of the number of persons living on income from rent of

agricultural lands from 626,000 in 1911 to 1,008,000 in 1921. On the other hand, the number of farm servants and field labourers has actually decreased from 1,192,000 in 1911 to 1,134,000 in 1921. In Madras there is a similar tendency throughout the last twenty years for cultivating landowners and labourers to lose ground to the cultivating tenant and the non-cultivating rent-receiver or rent-payer. Does this imply, asks the Census Superintendent, that the man who farms his own land is being forced to relinquish it to the non-cultivating moneylender from whom he will cultivate as a tenant? In the United Provinces the number of ordinary cultivators has increased from 28,712,015 to 29,843,168. On the other hand, the number of farm servants and field labourers has decreased from 4,552,043 in 1911 to 4,035,887 in 1921, the decrease being 11.3 per cent. In Bengal also the number of ordinary cultivators, including dependents, has increased from 29,748,666 to 30,543,557, and the number of farm servants and field labourers has diminished from 3,660,000 to 1,805,502, the decrease being 50 per cent.

Proportion of Labourers to Cultivating Owners.—It is doubtful whether this increase in the number of cultivating owners is an unmixed good. Where the agricultural labourer as a result of increased prosperity sets up as a peasant proprietor we may hope he turns his land and his own life to good account with the magic of property around him. But he is mostly without staying power and his holding is more often than not too small to be economic. By a selective process, the superior cultivator is driving the more thriftless of his brethren to the marginal areas. Thus, the extension of cultivation results, if in anything, in a gradually diminishing return to an increasing amount of labour and expense. It is noteworthy that the figures of the transfer of land by agriculturists to non-agriculturists show that the tendency of the latter to

take possession of the agriculturist's land is to a certain extent increasing synchronously with the tendency to let the land rather than cultivate through hired labour. In Bengal ordinary cultivators number 9,274,927 workers and the farm servants and field labourers number 1,805,502. There is thus only one hired labourer on the land to every five who cultivate land of their own. In Dacca and Chittagong divisions there is only one hired labourer to eight ordinary cultivators. In the United Provinces there are 16,092,000 cultivators (workers), while the farmers and field labourers total 4,035,887. Here there is only one hired labourer to every four cultivators (workers). In England and Wales there are, by contrast, well over three hired labourers to every farmer. It may be said generally that the holdings in the United Provinces, Bihar and Bengal are so small that the cultivation of them is hardly ever too much for their owners themselves to accomplish unaided. And, in fact, the greater the pressure of the agricultural population on the soil and the more uneconomical in size the holding becomes as a result of minute subdivision the less will be the tendency to employ hired labourers in the fields, who will have to seek employment in the rural tracts as earth-workers and road-menders or migrate to industrial towns and plantations.

Conditions of the Agricultural Labourer in India.—At present the conditions of the casual agricultural labourers are miserable and are being rendered worse on account of the competition amongst them. They vary from practical slavery to comparative independence; but such is the custom of the country that the master nearly always contrives to get his servant into his debt, and thus obtains a powerful hold over him in case he thinks of leaving his service. Sometimes these servants are paid a fixed annual quantity of grain; sometimes all they can claim is a specified

share of the yield of their master's land ; in other regions these methods are combined. Among many of the depressed castes of South and Western India, such as the Puleyas, the Holiyas, the Dublas and Kolis, serfdom prevails to a limited extent. Most of these families are serving from several generations practically as bond-slaves to their masters. They received money in advance for their marriage and morally bound themselves to serve till they paid off their debt. They are fed and clothed by their masters. The first agreement may be for a term of years, but this term usually leads up to another and that to a third, till in the end all hope of redeeming the advance is gone. With the increasing pressure on the small holding the economic conditions discourage the employment of inefficient semi-slave or hired labour while the rise of prices increases the cost of maintaining it on the land. Consequently, in many provinces, there is an exodus of agricultural labour from the holdings of cultivating landowners. There is no doubt that, since, in many provinces, there is very little culturable land left unoccupied, the best cultivators will not usually care for it ; and, as each additional area is leased for cultivation, there being less and less demand for agriculturists, more and more of these landless labourers drift in to take it up. Others drift to the mines, factories or plantations in the country or go abroad. Some provinces, however, are starving for agricultural labour, and agriculturists feel bitterly their want of it, apprehending a fall in the value of land in consequence. This has been felt, *e.g.*, in some parts of Madras and Bombay. In Madras in particular the emigration to Burma, Ceylon, or the Straits from the East Coast has long been a source of the depression of agricultural labour. Thus, the peasant proprietor in different parts of India is encountering contrasted conditions of the supply and demand of field labour. On account of the subdivision of land and an ever-

increasing pressure on his meagre resources cultivation cannot be efficient and economical in many parts of the country by the employment of the present quota of hired labourers. On the other hand, in other parts, land cannot be efficiently cultivated on account of the scarcity of agricultural labour, due to its diversion from the original pursuits by absorption in factories, mines and plantations or by emigration. Thus, both in India and Japan, we are already witnessing the transition phenomena of a change from the regime of intense devotion of national energies to agriculture to a period in which the people, driven by misfortune from their passionate attachment to the soil, will seek more and more in a varied industrial life the requisite relief from the pressure of an increasing population on their means of subsistence. In the co-operative movement, however, there is hope that agriculturists will find the ready capital and organisation which are required to increase their net profits. Both agricultural co-operation as well as the use of labour-saving appliances of scientific agriculture will be rendered inevitable in India in the coming decades, when the employer of general labour will be able to offer to the increasing classes of landless labourers more attractive wages than the farms can offer.

Danger of the Decline in Cultivating Ownership.—If the economy of the small-holding be not revolutionised in India, and the cultivators do not break down the many prejudices and false pride which prevent them from turning to many remunerative forms of labour, land will pass more and more to the hands of the non-cultivating, rent-receiving and middleman class, while an increasing class of field labourers recruited from an inefficient and impoverished peasantry which works on meagre resources will cease to be supported by agriculture. An agricultural situation similar to this has arisen in Japan, where, in spite of her remarkable advances in scientific agriculture,

the distribution of agricultural interests is fraught with grave social perils. Of the 5,500,000 households engaged in agriculture, 31 per cent. cultivate their own land only. The remainder, nearly 70 per cent., are dependent to some extent on rented land. Of this 70 per cent., 30 per cent. are pure tenants, owning no land at all. The remaining 40 per cent. combine tenantry with the cultivation of some land of their own. The number of owners who possess less than one and a quarter acres is just a little larger than the number of farmers who cultivate their own and some tenanted land. This causes the suspicion that a very large proportion own very little land. The actual farming population is being more and more divorced from ownership in the land it cultivates. Those families which own all the land they work are becoming not only fewer in proportion to the whole, but fewer absolutely. In the last ten years there has been a loss of 100,000. Correspondingly there has been a marked increase in the proportionate and absolute number of those dependent entirely, and those dependent partially, upon rented land. The entire increase in agricultural households is therefore an increase in tenants or partial tenants. And, besides this, 100,000 who owned the land they cultivated have become tenants. Thus the condition of the majority of the farming population, represented by the tenants and smallest owners, is miserable.¹

Modes of Relief to Agricultural Labour.—A relief to the surplus of agricultural labour is found in emigration. And, indeed, annual migrations of agricultural labourers from one district of a province to another and from one province to another have been going on for a long time. Thus, in the United Provinces, there is seasonal migration from the Terai to the rice-fields of the plains; in Bengal towards the north-east.

¹ Buchanan: "The Rural Economy of Japan," in *The Quarterly Journal of Economics*, August, 1923.

There is also the continuous exodus of unskilled labourers to the towns, mines and industrial centres which offer an expanding field of domestic service and industrial employment. Further, there is an overseas emigration of peasants who find markets for their labour in the mines, plantations and industries of the lands of their settlement. Indian emigration overseas has been subjected to a restrictive policy in recent years. In those regions where the number of day-labourers exceeds the demands of industrial employment on an adequate remuneration the problem of an agricultural proletariat becomes acute. This has been the case to a certain extent of the Panjab, the United Provinces, Bihar and Bengal, which therefore resemble non-industrial countries like Italy, Spain, Hungary and other parts of Central Europe in which there is a surplus of agricultural labour which cannot find adequate employment. Great Britain and Germany, on the other hand, have developed an industrialised farming, and the amount of labour engaged in it is considerable ; while in France, in spite of the pulverisation of holdings which has given rise to the great and unsatisfied need for restriping, the mortality of the war has combined with the rural exodus to create a surplusage of available land and a dearth of agricultural labour. The problem in Continental Europe already has been attacked by legislation, but this presents numerous difficulties. Schemes of insurance against agricultural unemployment in Europe do exist, but only in a few countries of Northern Europe, not where they are most needed. Again, the statutory regulation of hours of labour would seem purely to depend on the question whether a capitalised system of agriculture has given rise to a class of land-workers who have succeeded in attaining some degree of organisation among themselves, as, for instance, in Germany, Spain, Czecho-Slovakia and North Italy (in the rice-fields only) ; but such regulation is often

wholly lacking just where it seems most required. Or, yet again, protection by insurance against accident is apparently a benefit enjoyed most securely by those agricultural workers who happen to live in an industrialised country; the advantages of the industrial system have been extended to such agricultural workers, while in a non-industrialised country they may have to go without them. In India the question whether, or how, hours of agricultural labour might be fixed has now been raised. In Europe, in the northern countries where arable farming is associated with stock-raising and there is distribution of employment over the whole year for a permanent staff, it has been found practicable to limit hours of employment. So uniform a system is not found in Indian farming, where the hours of labour are unequally distributed between different seasons, and where both in the sowing season and during the harvests labourers must work long hours on account of the nature of their work and the special difficulties of Indian agriculture. Yet there cannot be any doubt that the casual hired labourer is made to work for very long hours under most trying conditions and has no organisation like the English Agricultural Labourers' Union and the Agriculture Section of the Workers' Union, which have met with striking success in securing better terms for hired labourers.

Recent Land Reforms in Europe.—Another device which is common to most European countries for the stabilising or improvement of agricultural labour conditions is land settlement. The end of the great land holdings came quickly, rudely and without system in Russia. With the outbreak of revolution the peasants simply seized the land, appropriated the neighbouring estates and divided them among landless and landholding peasants according to the will of the soviet, or perhaps in certain cases according to the right of

strength. They did not wait for formal methods, for laws and decrees and officials from Moscow. The question of compensation to the owners was not raised. The Central Bolshevik Government at Moscow had the theory that the great estates should be made into communal farms, but the peasants did not fall in with that way of thinking. A limited number of communal farms were put in operation, but their efficiency proved very low and many of them have since ceased to operate. The general upheaval may result ultimately in a thorough-going revision of the land holdings, so that each peasant will get his land in a single piece. Comparatively little thus far has been done in this direction since the Revolution.¹ In Germany an owner's property in excess of 247 acres has become liable to confiscation. In Hungary the Act states that he may retain enough land to enable him to farm on a scale consistent with good agriculture. In Bulgaria he may keep only 75 acres of arable land or 125 acres of forest and pasture land. In Roumania 5,000,000 acres had been expropriated at the end of 1919 and the large farms between 100 to 500 hectares, which cannot be exceeded legally, cover only 8 per cent. of the country's territory, and they will be capitalised farms which will be models for the peasants. In Poland a law providing in principle for the breaking up of the large estates was passed in 1919, and about 1,500,000 hectares are to be parcelled among the small peasants and the landless men. The maximum area of the peasant holding thus formed or enlarged is placed at 34 acres in Poland; at 21 in Hungary, where, however, there are also to be four-acre labourers' settlements. In Yugo-Slavia the maximum legal area of property varies with districts from 50 to 500 hectares. In Czecho-Slovakia an owner may retain 150 hectares of agricultural land or 250 of

¹ Durand: "Agriculture in Eastern Europe," *Quarterly Journal of Economics*, 1922, pp. 193-4.

land of any sort.¹ Thus there have been sweeping agrarian reforms in Central and Eastern Europe, all of which have had the same scope: they have expropriated large landowners and divided up their estates among peasants and landless men. The maximum area varies which an individual may continue to hold without liability to sequestration. Three principles are recognised: (1) That the expropriated owners have a right to compensation; (2) that the new small holders should pay, by easy instalments, at least part of the price of the land they acquire; and (3) that the new holdings are to be such as can be farmed by the owner and the members of his family. In Scotland, Acts have been passed protecting tenants who hold no more than fifty acres of land and pay a rent of no more than £50 a year, and empowering the Board of Agriculture to constitute new small holdings and enlarge those in being, either in agreement with the landlord or in execution of a compulsory order of the Scottish Law Court. Like the Scottish reforms and those made in Continental Europe since 1917, Acts have been passed in Ireland which have made many rack-rented farmers into small owners, and, together with the active and efficient co-operative societies, into thriving owners. In the almost purely peasant countries like Scandinavia, Denmark, the Low Countries and Greece there is no "Green Rising," because almost all the land is held up already by prosperous small farmers. There is an actual shortage of agricultural labour in Sweden, while in Denmark cultivation is so highly intensive that it absorbs the available supply of labour.

Land Reforms Needed in India.—It will take a long time to develop scientific agriculture to the Danish standard in India, while the efficiency of village trade unions and success of collective bargaining which have

¹ Vide *Manchester Guardian Commercial*, August, 1922; and Irvine: *The Making of Rural Europe*.

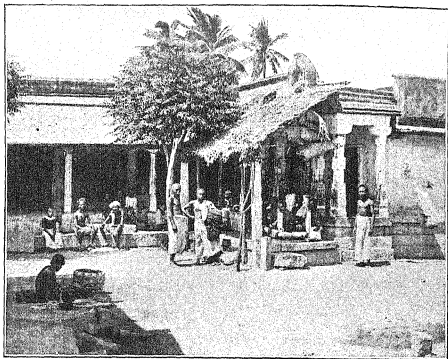
indirectly contributed to good farming and a high rate of agricultural production cannot be expected in India within a few decades. Rural syndicalism has permeated the land-workers in Spain and Italy, while the success of agricultural co-operation has given rise to schemes which propose that the land of the country should be nationalised, and that the State cede the usufruct of the land to land-workers' co-operative societies. This will mitigate the evil of bureaucratic control and management of land, which is responsible for the failure of agrarian communism in Russia. A co-operative organisation, as the Co-operative and Collectivist Society in Italy, which encourages peasant farming by giving expert direction of cultivation, buying and selling, has a greater future because it solves the problem of an inequitable distribution of land resources without minimising individual initiative. As long as there is no radical change in the rural economy of India through land adjustment, agricultural co-operation or scientific farming, the problem of the landless peasants will become more and more acute, and there will be a tendency for this class to come in line with the industrial proletariat of the cities. That will portend social upheavals which will be disastrous to the agricultural civilisation of India. In Europe at present there are few countries in which there is no State machinery for providing landless peasants with land. In peasant countries, where the services of the hired labourer normally are wanted for special seasonal work only, there is an almost universal tendency for this class to have a small holding on which they can fall back. In countries where large numbers of such labourers also are employed by capitalist agriculturists there are similar proposals, so that the worker's total resources from land and labour should be such as to make it unnecessary for the whole family to take part in field-work and migrate from home for a season for that purpose. So far as possible such

seasonal work should be undertaken by adult males, preferably young and unmarried. The land hunger is far more acute in India than in the West, and this passion is at the root of most of her rural discontents. Nothing will check the tide of agrarian unrest but a forward land policy and a series of measures which will protect the smallholder from being weakened in his economic position by all those circumstances that have been associated both in India and in Europe in the nineteenth century with a change from peasant proprietary to peasant proletariat.

NOTE

The Serfs of South India.—A *padial* is a sort of serf who has fallen into hereditary dependence on a landowner by debt. In almost every case the original debt was a sum of money borrowed by a landless man to solemnize his marriage or, more frequently, that of a son or daughter, the borrower undertaking to work for the lender until the debt should be repaid, in return for a certain limited supply of food. Quite recently a lad of 18 borrowed Rs. 25 in cash and grain to celebrate his wedding with due festivity and became a *padial*. Such a loan is never repaid, but descends from one generation to another; and the *padials* themselves are transferred with the creditor's land when he sells it or dies. One proprietor informed me that he paid his *padials* 30 Madras measures of paddy per month per head. At present prices 30 Madras measures of paddy are worth about Rs. 3.12.0 (5s.). A Madras measure of paddy weighs $2\frac{1}{2}$ lbs., but when husked loses about half its volume and one-third of its weight. The *padial's* paddy allowance therefore works out at about 27 ozs. of raw rice per day; a quantity that the man is probably able and willing to eat himself without assistance from his wife and family. Another landowner gives his *padials* 22 Madras measures of paddy per month, a daily meal of *ragi* porridge, and annually two cloths and 18 measures of paddy or some other grain. The family of the *padial* must help the patron when required, but then

extra payment is made. *Padials* are sometimes required to work with two intervals from 4.30 a.m. to 6 p.m.; but the regular hours of labour are 6 a.m. to 6 p.m. Sometimes he is required to work 24 hours a day, including night watch. A field-labourer, particularly in Salem district, gets a maximum pay of Rs. 45 a year in advance, and has to work in the field or in the landlord's house the whole day and night. The labourers' wages in factories and plantations are considerably higher than the wages of agricultural labourers in this country. This is why there is steady and constant migration of the pick of the Indian agricultural labourers to the plantations and factories in towns. As a rule the agricultural labourers were paid in kind. Since the price of food grains is rising enormously, the landholder is now substituting payment in cash for payment in grains. This is growing common. It is unjust that the landholders should sell away the grains and force these field-labourers to purchase the same from the petty shopkeepers at a higher price. The one way of escape for the *padial* from this condition of servitude and poverty is emigration. At Villupuram there are offices of the 'Ceylon Labour Commission' which recruits labour for the Ceylon plantations. Their economic condition in Ceylon is vastly improved, and they have opportunities of saving money, and, if they choose, of returning to their native districts and buying land. Needless to say the emigration of *padials* is discouraged by their creditors. It is impressed upon the *padial* that it is a point of honour for him never to leave his master; and he is given to understand that he cannot legally do so. In some districts the creditors adopt the device of making the *padial* sign a fresh document every few years, so that in a court of law it may be made to appear that a fresh debt has been incurred. Emigration to Ceylon is not on the indenture system, and the emigrant's contract with the planter who employs him is terminable by a month's notice on either side at any time; nevertheless there are some signs that the agitation against indentured emigration to Fiji and other places may be widened so as to check the flow of emigrants to Ceylon.—(Slater: *Some South Indian Villages*, pp. 8-9.)



A Guild Hall and Temple in the South.



Cawnpore slums.



CHAPTER XVI

DISTRIBUTION OF POPULATION

Drift to the City in India.—Since the growth of the factory system of manufacture we find that in Europe, Asia and Africa a redistribution of population has been in progress. The cityward drift is a world phenomenon, and philosophers are commenting on the effects of swift urbanisation of population. In India also the first phase of industrial development has been characterised by the desertion of the village and the rise of the big city. It is true that the country is predominantly rural, with only 10 per cent. of her population living in the towns as compared with England's 79 per cent. and France's 44 per cent. But Bombay, with a percentage of 23 per cent., and Bengal are fast being urbanised, and the social and moral evils of the cityward drift are here becoming as manifest as in the West. While the towns with population above 50,000 have increased by over 16 per cent. in the last decade, the increase has been considerably less in those between 5,000 and 50,000, while the population of towns between 10,000 to 20,000 has not even kept up with the progress of the general population of the country. Thus, both in Bombay and Bengal it is industrial and commercial activity which determines the distribution between the progressive, stationary or decadent towns, though on a far smaller scale than in the West. The average country town in India has hardly grown at all in half a century, and is much smaller than the average town which is its nearest counterpart in Europe. In Bengal, as there

are no residential villages properly so called, so there are no towns of the smaller class, and the population has a decided tendency to congregate in towns of more than 20,000 inhabitants.¹ Not merely in Bombay and Bengal, but throughout the country, the rural communities have been left behind in the general advance of the country. The agricultural population works on very meagre resources, and these resources, so far as the well-being of the farmers themselves is concerned, are distributed very poorly. The changes in land-ownership and tenancy in the last few decades show that this distribution is growing worse. There is not merely an increase of tenants or partial tenants, but also of landless labourers who seek employment in cities and industrial centres. Their families remain in the villages, where they bring down the wages of field labourers by competition. On the other hand, an industrial population can hardly be built up in the cities on the basis of floating immigrant labour, unless on a deliberate plan of garden city settlements, in which the industrial worker can be given an opportunity of cultivating a plot of land, which would support his family. Unless some solution is found, the growth in numbers of city populations will create serious conditions for the unskilled labourer. His wages will not rise on account of increasing competition, and he will find it increasingly difficult to maintain connexion with his village and his family.

Cities Revived or Built in India.—Since the development of railways the river traffic has declined generally, and the old cities on the great rivers sometimes have dwindled into insignificance. Yet the country is too vast to be approached everywhere by rail, while the natural traffic which passed through the accustomed waterways has not been diverted easily to the railways. Thus there is still an interchange between river and railway traffic. Wherever there is a break

¹ *The Census Report of India, 1921.*

in transportation, *i.e.*, wherever cargoes shift between land and water, railway and river, a new city has sprung up, or an old city has again risen into importance. Another cause of the revival of decadent cities in India has been the development of industries on modern lines. Near coal-pits and railway workshops, however, new cities have grown and expanded at a much greater pace. The typical industrial and commercial centre is more than twice as large as the average country town in Bengal and has grown rapidly since 1881.

Lure of the City.—Modern industries have led to a vast concentration of population in favourable sites and regions. Such industrial cities are peopled mainly by immigrants. Only 8 per cent. of the people of the country towns were born outside Bengal; the proportion in the case of Calcutta is about one-third, but in the case of the mill-towns it is considerably over two-thirds and in Tittagarh no less than 90 per cent. were born outside Bengal. In these cities the advantages of banking, trade and transport are often so great that industry becomes concentrated and fixed there. This leads to many disadvantages. In the first place, the pressure of competition in the city becomes unnecessarily severe. Were small factories and workshops built in other centres they could ease the competition of the labour market by tapping fresh sources of supply, they would possibly assist to develop tracts which are too far from the larger centres of industry to come under their influence and they would help to restore prosperity to the old towns that are rapidly declining. In the second place, the task of housing the workers has been rendered most difficult. The labourers far outnumber the dwellings in cities and have to live in close-built insanitary *bustis* and *chawls*, where moral deterioration becomes easy. Nor is the condition of the middle-class much better on account of the high rents prevailing. Men of brains

have migrated to the cities, where the prospects of employment in the public service and of success in trade or the professions are alluring. The schools and colleges are mostly in the city, which, besides, have other attractions lacking to the village. In our time the city has gained electric trams and light, pure water, sanitary regulations, high schools, universities, social and literary centres, while the village becomes more and more an insanitary and undesirable place to live in. The city has also its excitements, amusements and dissipations ; and the villager who develops a distaste for moderate pleasures and recreations and now looks upon farm life as monotonous finds the centripetal pull of the city overpowering. Many who grew up in the village and never found the farm life dull and uninteresting become restless after they learn to vibrate with the multitude. It is the herd which develops a morbid passion for huddling, and labourers who formerly belonged to the farm and now have learnt to react to the crowd in mines and plantations cannot easily be persuaded to forsake the multitude for the loneliness of the village. Once the village was the magnet for the wealthy. The townsman who acquired wealth in the city withdrew to the village, where he built his mansion, celebrated the seasonal festivals and thus won the social prestige due to the country squire. But now the leisured class seeks relaxation amid the refinement and comfort of the city, and the *rôle* of the country squire attracts it no longer.

Evils of City Life.—Thus, the centre of gravity of India's life and culture is shifting from the village to the city, resulting in a sudden disturbance of the old equilibrium. There has been a revolution in the system of food, exercise, recreation and personal hygiene. The open-air life and amusements, the field-latrine, the daily ablution in the tank and the river, are all superseded in a close and crowded environment,

resulting in the impairment of healthy, normal metabolism. Among the middle-class the introduction of fish and meat diet without a corresponding increase of strenuousness in work and habits has contributed to dyspepsia and diabetes ; while the numerous cases of nervous breakdown and suicide testify yet further to the want of biological adaptation. In the fields and cottages the labourers have been able to acquire a considerable degree of immunity from such diseases as malaria, hookworm and *kala-azar* ; but in the confined atmosphere of factories and slum dwellings they have lost the equilibrium which their bodily organism has established with the parasites it encounters in the rural tracts, and fall easy victims to fresh infections. Thus it is often that epidemics break out in the cities, claiming their victims by thousands in the slum areas and scourging back to the village the physically broken-down survivors. There is another characteristic evil resulting from lack of adaptation. In India early marriage is the rule, especially amongst the labouring classes. In the fields the family is the natural and indispensable unit for life and work. But industrialism separates the sexes and affords only a niggardly satisfaction to the family instinct. In the industrial cities and regions in India the females often number less than half or even a third of the number of the males. Labourers come to the mill-towns and cities when their married life already has begun and live bachelor lives in overcrowded *bustis* and *chawls*. The rooms are dark, dingy and gloomy, without any comfort or attractiveness. The discipline and the monotony of their work are irksome to them. In the villages they worked with growing things out of doors and in touch with domestic animals, but now their work appeals less and less to their native tendencies. Thus they seek refuge in unwholesome recreations. The intemperance and dissipation which shock the moral sense of the community are but Nature's

revenge for what is denied to man in his new environment ; it is not the fault of those who fall, but of the environment which makes that fall easy and sometimes inevitable by baffling man's elemental impulses, which therefore break out in rebellion.

NOTE

Genius and the Countryside.—Professor Giddings thus speaks on a healthy division of social functions between the country and the city : “ The city produces population, energy and original ideas—the raw materials of social life—as the country produces food and the raw materials of manufactures. The city combines ideas and thus forms the social mind. In exchange for the streams of fresh life that pour in upon it from farm and village, it sends forth to every rural community, and even to the isolated homestead, stimulating currents of thought and of moral enthusiasm. It quickens social instincts and awakens interests in men and women whose lives were else monotonous and hard. It raises their standards and puts before them formulated policies for their consideration. Genius is rarely born in the town. The world's great faiths have germinated in the desert, or among mountain heights. Its great policies have been suggested by unsophisticated men. It owes its great discoveries and its immortal creations to those who have lived with Nature and with simple folk ; but the creation and the discovery, the policy and the faith, have lifted and transformed the race only when they have subsequently been fashioned by the mind, and have been charged with power from the heart of the multitude.”



CHAPTER XVII

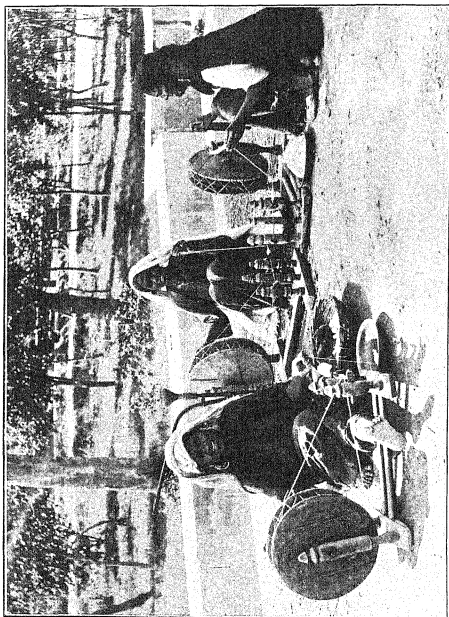
RURAL RECONSTRUCTION

Scientific Agriculture and Cottage Industries.—The decay of the village is a great and insistent problem in India. In fact, the spread of industrialism in the country and the rural exodus have been urbanising the people, in some provinces, to an extent which is fraught with grave dangers to an agricultural society which India is and always will be. The remedy to the cityward drift will be found in an improvement of the technic conditions of the village which will satisfy the more intellectual and ambitious of village youths who do not at present find sufficient opportunities within the limited scope of rural life. The introduction of scientific agriculture, which will provide new scope for work and profitable employment amongst the educated classes, will arrest the exodus of those who now have acquired a distaste for the labour and monotony of farm life. The introduction of scientific implements and machinery will revive the cottage industries and handicrafts. These are best suited to the conditions and genius of the country, especially those parts of the country where agriculture is precarious. Agriculture in India does not mean the mixed farming, familiar in the West, that remains busy throughout the year, but ordinarily involves very hard work for certain short periods and almost complete inactivity for the rest of the year. When the cultivator's family is not required in the fields, it usually resorts to cottage industries in which the continuity of the employment is not essential. The most typical of such cottage

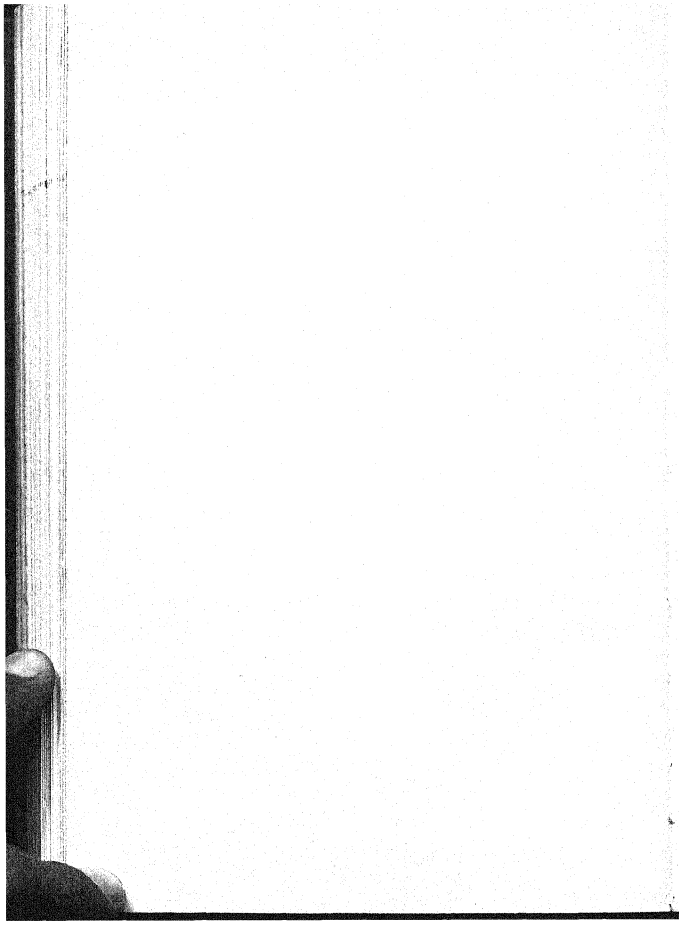
industries is hand-loom weaving, which in spite of the imports of cloth and yarn is still holding its own throughout the country. In Assam in particular weaving is an established custom of the housewife, and the cloth is always ready for use even among the higher middle-class. The following figures show the extent of the cottage industry of weaving :

Province, State or Agency	No. of Hand-loom in Existence
Ajmer-Merwara - - - -	1,587
Assam - - - -	421,367
Bengal - - - -	213,886
Bihar and Orissa - - - -	164,592
Burma - - - -	479,637
Delhi - - - -	1,067
Madras - - - -	169,403
Panjab - - - -	270,507
Baroda State - - - -	10,851
Hyderabad State - - - -	115,434
Rajputana (Agency) - - -	89,741

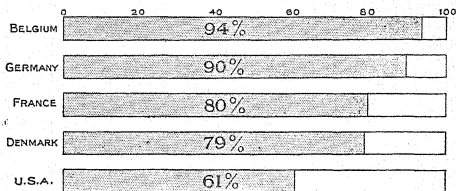
Village Industries Holding their Own in Europe.—In countries like Germany, Switzerland, Holland and Belgium village industries are well established. Cheap oil-engines are used in the villages and co-operative purchase of appliances and raw materials, as well as co-operative sale, have contributed not a little to the efficiency of cottage production. Indeed, wherever an association of the artisans and workers for buying raw materials has been formed their condition has rapidly improved. Industrial banks also have played a great part in financing small industries on the Continent. Thus there are watch-makers, weavers, wood-carvers, basket-makers and the like in Switzerland; lace-makers, furniture workers, silk-weavers, cigar-makers,



Hand-spinning in Kashmir.



shoe-makers and tailors in France; toy-makers, straw-plaiters and weavers in Germany, whose products find even an overseas market. Hand-labour persists; the small employer keeps his workshop alone, or with his family, or one or two assistants. But, because of the extension of the market, the middleman has intervened between the producer and the consumer, or the co-operative organisation groups the home-workers and acquires sufficient resources to



Percentages of Small Businesses in lands of large-scale production.

resist their exploitation by industrial capital. Even spinning wheels are coming to life again in various German linen districts. No less than 240 small hand-operated linen factories have been opened lately in the rural districts of Oldenburg, Bremen, Luxemburg and farther west, prompted by the reported increase of the flax-cultivating area in the Northern German districts, which is stated to be 40 per cent. larger than it was last year. The estimated number of hand-operated spindles in Bavaria is 500,000. Similar conditions obtain in the Saxon and Silesian linen districts, where factory-made linen can hardly compete with hand-made qualities. Such is the surprising comment of the German Department of Labour, which recently carried out a systematic census of the home industries still existing or again coming to life in Germany.

Artisan Societies in India.—Need of Co-operation.—In India we are familiar with societies of hand-loom weavers. The hand-loom weavers buy their cotton yarn or their raw silk through the society or through a secondary body to which the society is affiliated, and either sell their finished goods independently or re-sell them to the society, or follow either method from time to time as may be agreed. Similar societies of co-operative dyers, leather-workers, wood-workers, metal-workers and printers, etc., are co-operating with good or ill fortune in the various provinces ; no class is so widely spread as that of the weavers. The home industries of Burma have a number of small societies financed by loans from Government. The Mandalay Artists' Society is composed of portrait painters and mosaic workers and is under efficient management. The Hema Mala Union is composed of craftsmen of many types, hardly any of which are strong enough numerically to form producers' societies of their own. It is true that the artisan in India has still retained a large measure of independence and has not suffered from boredom or discontent as in the industrialised countries. There cannot be any doubt, however, that the competition of factory-made articles and the exploitation of the middleman have greatly lowered the standard of his life and production and threatened many arts and handicrafts with extinction. The capitalistic system of industry is making headway in India, and it seems inevitable that unless we organise the skilled artisans in co-operative institutions, financially sound and technically efficient, we cannot prevent India from being entangled in the net of profit-making capitalism.

Co-operative Labour—Guilds and *Artels*.—Besides the societies of artisans or productive societies, there are on the Continent in great numbers labour societies which undertake contracts of construction or supply and in some tracts have made the appearance of a

private contractor a matter of curiosity. In India we usually find gangs of labourers under a *sardar* taking contracts, especially in works of earth-filling or excavation, collection of stone and *kankar*, road making and mending, the making of bricks, etc., and sometimes even in mill labour. A similar *artel* or group system pervades every kind of activity among the Russian people. The history of the making of Russia and of the colonisation of Siberia is a history of the hunting and trading *artels* or guilds followed by village communities, and at the present time we find the *artel* everywhere: among each group of ten to fifty peasants who come from the same village to a large town as weavers, carpenters, masons, boat-builders, and so on; and among railway parties, custom-house workers, etc. Fishing is always carried out by *artels* in the Ural, the Volga and all the lakes of Northern Russia. We see similar allotments of fishing grounds among the fishermen's castes in India in the great rivers, for instance, in Eastern Bengal or in the sea as in Puri, Madras, Tuticorin or in the Cochin backwaters. Among the Indian boatmen who bring jute, cotton and timber in heavy-laden cargo boats for export from the rural districts to the trade centres there is a similar collective responsibility, and wholesale merchants repose great confidence in these transport workers. Indeed the system of co-operative labour like that represented by the labour society in Italy and the *artel* in Russia, the general dissemination and enthusiastic prosperity of which have evoked such praise, is quite familiar in India among the class of landless day-labourers.¹ A grave blunder is committed where the modern co-operator ignores the indigenous forms of co-operation. In the co-operative system of labour our aim should be to rehabilitate the organisation of hired labour in the country which

¹ Mukerjee: *Principles of Comparative Economics*, Volume II, Chapter XVI.

works for a collective remuneration under an elected chief. Some societies already have been started on this plan and their progress is awaited with great interest. Madras has a labour union in a rural area; societies in a remote region of Burma cut sleepers on a contract for the Forest Department, similar societies of timber workers flourish in the State of Kashmir, and a society of coolies in the hills of the United Provinces attained a measure of success until a reform of transport methods in the neighbourhood rendered their co-operative organisation superfluous. The proceedings of the few labour societies which exist are not always unexceptionable: loaders of salt in Madras take useful contracts, but makers of salt in Bombay are inclined to convert their co-operative society into a ring for forcing prices up and wages down. A society of municipal scavengers is found holding a contract for municipal toll-collecting, while cobblers obtained a lease of a forest for timber extraction.¹

Agricultural Co-operation in Central Europe.—A more important success attended the efforts for the revival of agriculture in Central Europe. The chief measure in this connexion is agricultural co-operation, of which the principles were first discovered by Raiffeisen in Germany. According to these the peasants form themselves into a small group and become absolutely credit-worthy by a combination of unlimited liability, close supervision and bank deposits. From co-operative credit the farmers advance to co-operative cultivation, co-operative purchase of seeds and machinery, co-operative sale of crops and co-operative enjoyment and recreations. Groups of co-operators, concerned first about the world immediately about them, developed in the agricultural countries of the West enterprises in an endless variety which excite the enthusiastic interest of reformers. It is the achievement of Italian co-operators which is

¹ Strickland: *Introduction to Co-operation in India*, p. 64.

beyond anything attained elsewhere in Europe, and is worthy of the attention of all those in India who are interested in rural reconstruction.

Co-operative and Collectivist Farms in Italy.—The agricultural progress of Italy has shown that the co-operative farm would be a better foundation for a rural co-operative system in India than the village bank. Such a co-operative farm represents a continuity of the traditions of the old and essential rural communalism wherever they have persisted. The co-operative farm, as in Bergamo in Italy, rents or purchases land for cultivation by its members, who pay the society rent in cash or in kind. Each member must cultivate the land himself; and, provided that he does not sublet, that rent is paid and the land not abused, he will not be disturbed until the lease expires. The distribution of the land is then revised, and if one family has too much and another too little, adjustments are made. Every member finds his own implements and live stock, but costly machines like fodder-cutters and threshers usually can be hired from the society. Seed, manures and other agricultural requisites are supplied on payment, and some co-operative sale is attempted. In the more advanced societies there may be a bank where loans can be had or savings deposited, and there may be a store also where household requirements can be purchased. Sometimes, as in the village community, land is entirely redistributed after a period of years and holdings are made up from different estates, so that every one may have good and bad land alike. This is exactly as it will be in Northern India if the *bhaichara* village communities are reorganised. Pure or modified collectivism also is attempted in connexion with agriculture in Italy. In the collectivist societies, which own about 20 per cent. of the cultivated area of the district of Ravenna, implements, machines and live stock all belong to the societies and the members receive small plots which

vary according to the size of the family and the amount of land at the society's disposal. The collectivist farm has introduced better farming and also better living. In Italian villages, theatres are being built out of undistributed profit, and a local artist has been employed to decorate its walls with frescoes, in which the *braccianti* could be seen as Nature made him, playing classical instruments in not very classical attitudes. In one society schooling is given to members' children during the summer. In another milk was supplied during a period of scarcity. Some give medical assistance, others insure their members against old age.

Indian Collectivism.—If evidence of such collectivism is desired in India the Southern villages should be visited. The sources of common village funds in Paravai village in Madura district are :

	Rs.
1. The annual sale by auction of the right of the fishery of the village tanks - -	500
2. The proceeds from the sale by auction of the right of installing temporary booths near the threshing-floor on harvest occasions - - - - -	100
3. Paddy contributions for festivals. Cultivators—Brahmans and Sudras—contribute six Madras measures for each acre.	

The objects of expenditure for the village funds are :

1. The repairs of the *Chawadi* or village guest-house, where the *Panchayat* meetings are also held, and of six temples.
2. The periodical festival of the village gods and goddesses, and the entertainment of actors of the village plays on such occasions.
3. Charity to beggars, learned men and pilgrims, and the entertainments given by playwrights and magicians, *kuthris* and *pettambars*.

4. Repair and maintenance of irrigation channels. Communal labour is usually employed. Each cultivator must supply one labourer for two and a half acres of land ; if he fails to do so he has to pay wages of one labourer that is employed, otherwise the supply of water from the irrigation channels to his land will be stopped.

Co-operative Irrigation in India.—In many of the villages of south India there are associations of peasants called *Sethis* which reclaim virgin land and assume control and management of an embankment, a tank or an irrigation channel. There are, again, agricultural partnerships of various kinds met with in different parts of India, and many of these devote themselves to the building of a dam, the maintenance of an irrigation channel, etc. What now is needed is a scheme for co-operative irrigation by the cultivators which will utilise the old rural habits in this regard. The peasants should be asked to pay to Government either a lump sum on the outlet or a fixed sum on the irrigated area, and to arrange for themselves the distribution of water. The measurer of irrigation water, the *nirghunti* of Mysore or the *madyan* of Madras, is exceedingly trustworthy, and where such traditions of collective irrigation are strong there cannot be any wastage of water or dishonesty in distribution. In Bengal seven irrigation societies have already been registered under the Co-operative Societies Act. They have a very fair record and are more truly co-operative than the semi-capitalistic bodies of North Italy. In Bihar the Banka Central Bank advanced money to twenty-six societies for digging wells, excavating silted-up dams and repairing *bunds*. Central Banks both of South Bihar and Chota Nagpur have been keeping before them a systematic programme of such improvements.

Signs of Revival in Indian Rural Co-operation.—In

different parts of India co-operation is being directed towards social welfare and the prevention and settlement of village disputes. In these objects again we find the community spirit of the Indian villages revived and adapted to modern needs. Seven anti-malaria societies in Bengal have perplexed the Registrar by their persistent enthusiasm and their remoteness from direct economic ends ; health is nevertheless the first wealth of man, and to exclude them would be to adopt a needlessly narrow definition. In the Panjab also a group of credit societies have bound themselves to the regular consumption of quinine in the rainy season. A co-operative dispensary in Bihar flourished with assistance from the District Board until the latter body felt constrained to assume direct control. Co-operative post offices in the Panjab were similarly adopted by the Postal Department after a short orphanage. A co-operative dispensary in the Panjab has proved a popular venture.¹ The arbitration society, which, if finally approved, will be one of the most triumphant successes of the co-operative doctrine and method, is established in the Panjab only, where there are already 120 societies, and new applications are being constantly received. The number of village artisans, servants and functionaries shows the variety of social needs and purposes to which the rural communalism of India ministers.

Indian Village Functionaries and their Allowances.—In the South Indian village community above referred to all the functionaries, artisans and servants still retain rent-free lands, though they are also paid in measures of grain per acre from the cultivators as shown below.

<i>Kaval</i> , watchman	-	-	-	5 acres, and one measure of grain per acre.
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¹ Strickland : *Introduction to Co-operation in India*, pp. 72-73.

<i>Nirhunti</i> , irrigation-man -	- 2 acres, and 2 measures per acre.
<i>Tothi</i> , scavenger and messenger	1 measure per acre.
Carpenter, who also repairs vehicles for the processions of the village gods and goddesses and likewise repairs needles	1 bundle for 2 acres.
Barber - - - - -	1 acre and 16 measures per acre.
Washerman - - - - -	1 acre and 36 measures per acre.
Potter, who is also the priest of the Ayanar temple. He makes the figures of horses and elephants in pottery for Ayanar	Still retaining one acre of <i>maniyam</i> land.
<i>Kuthari</i> , drummer and dancer -	1 acre of <i>maniyam</i> land.
<i>Panchangi</i> , astrologer, who fixes auspicious hours	1½ acres of <i>maniyam</i> land, also fees on marriage occasions.
<i>Kathan</i> , whose services are requisitioned at the festivals of the goddess Minakshi, at which he is employed to keep order	2 acres of <i>maniyam</i> land.
<i>Sthanpatyam</i> , also a servant of the Minakshi temple	3 acres of <i>maniyam</i> land.
<i>Joshi</i> , astrologer, also for the temple of Minakshi	1½ acres of <i>maniyam</i> land.

In the same village certain lands also have been endowed for some specific religious services; for instance, *kamalaputram*, or the offerings of betel leaves to the god Subramanya, and *annabhishekham* to Minakshi.

Co-operative Farm Suited to India.—The collectivist farm, which is the high-water mark of agricultural co-operation in Europe, will not be congenial to the Indian soil, where intensive agriculture and private property are indelible features. Where new estates are purchased or large farms are rented the collectivist principles might be applied with the tenants and field labourers employed as before, wages paid and the produce pooled. In irrigated and heavy land, as the rice-fields of Malabar and Travancore, where the expert and the machine are most useful, the collective farm might be a great success ; but it would have no chance in a Himalayan valley, or a hilly region, or in the plains where there is an elaborate rotation of crops. On the other hand, the co-operative farm on individualistic principles, which has been so successful in Italy, and now has been introduced into Ireland, Serbia and Roumania, will suit better the traditions of Indian rural communalism working with the village organisations and responding to the Indian's profound desire for property.

Growth of Co-operative Enterprise in Europe.—In some of the agricultural countries of Europe the co-operative movement has outgrown its primitive forms and functions. Thus, from the simple work of digging canals or raising dams the co-operatives of single localities have passed to constructive work of a simple kind. Later, when they undertook technical tasks that were much larger and more complicated, they felt the necessity for grouping themselves into higher organisations or combines, which have been recognised and regulated by law. In Italy these combines have succeeded so well as to be able to compete with the biggest and best-equipped private enterprises. They obtain, reclaim and cultivate waste land owned either privately or publicly. In districts where deadly malaria prevails and private landowners and contractors will not work, they reclaim thousands of acres

and put them under cultivation. They are building bridges in brick and steel, public and private palaces and entire garden cities ; they are constructing roads, railways and ports ; they are digging canals ; they are manufacturing machines of all kinds ; they have rebuilt, within a short period of time, whole districts devastated by the war. In the arts and crafts they are numerous. From the small groups of craftsmen in a shop and the gangs of navvies who undertake enterprises of increasing importance and difficulty they have reached the stage where the guilds employ their own experts, craftsmen, directors and thousands of workers. They even have undertaken co-operatively great reconstruction works in France and Russia in agreement with the labour organisations of these countries. All this has great lessons for India's economic future.¹

India's Communal Traditions—Guilds and Castes.—The economic structure of Indian society is governed by the communal traditions of the village organisations on the one hand, and those of the castes, corporations or guilds on the other. India's ancient and essential communalism still has kept alive the autonomy and power of village assemblies and of numerous *panchayats*, caste and guild assemblies, which expand into regional assemblies in obedience to the pronounced Indian tendency towards autonomy and aversion from centralisation. There has been an interlacing of village and caste or guild institutions and functions in Indian society which has emphasised social ends and prevented the crystallisation of class feelings and interests. There, no doubt, have been abuses, but it is nevertheless true that the general tendency has been to lift the caste or guild bias into a broader mentality. It is in this respect that the guild history in India is different from that in the West. In

¹ For a description of co-operatives in Italy see the writings of Oden Por and Darling's *Co-operation in Germany and Italy*.

a small village the guild is all-powerful and the caste coincides with the guild, lending it a double authority. In the cities we often find artisans of different castes united in a common guild, which is quite different from the caste assembly. In Benares the silk-weavers, gold wire-makers, dealers in gold threads and other artisans and traders form close industrial corporations, which exercise a general supervision of the conditions of apprenticeship and arbitrate in craft and trade disputes, but the different guilds mutually support one another. In Madura the blacksmiths, the carpenters, the coppersmiths, the stone-carvers and the goldsmiths form one guild assembly which takes cognizance of any matters that concern the members as a craft. Similarly, there is another guild organisation which is less compact and more loosely co-ordinated, comprehending the different classes of the *sourashtras*, artisans, middlemen, traders in silk cloth as well as general merchants, in the name of the same caste. They exhibit an unusually strong *esprit de corps*, which has stood them in good stead in their weaving, which is more scientifically carried on, better organised and is in a more flourishing condition than elsewhere. In Baroda the merchants and the Brahmans form the guild, presided over by the *nagarseth*, or city chief, to which all trade guilds are subordinate. The merchants' and bankers' guilds, the craftsmen's guilds, and also those of retail dealers, barbers, washermen, flower-sellers, etc., have their ramifications throughout the smaller cities of the whole region, and they have their organisation to collect and apply the common funds. In different regions and among different occupations the solidarity of the industrial and mercantile guilds and their capabilities of self-government have varied, and the recognition of their place and status at the hands both of ruling authorities and of the community as a whole has differed accordingly. Again, a flourishing

guild which regularly derives its fee income from monthly or annual collections of a certain percentage on profits and spends it on charity, feeding the poor, refuges for animals (*pinjrapols*), guest-houses (*dharma-shalas*), tanks, shade-trees, cattle-troughs, fountains, supply of rice, *ghee*, oil and other requisites to temples, anointing and scent for the bath of the gods, processions at festivals, etc., naturally commands greater prestige than a guild which contributes its small income derived from occasional subscriptions to the expenses of a village or city festival and amusement. In India the interlacing of caste and guild prevented the development of the close oligarchy which is characteristic of the Western guild organisation. In the development of guilds in Europe we find, particularly in some of the German cities, opposition between the well-to-do merchants and the artisans. In some centuries in particular the groups of craft guilds that rose to special eminence in most of the towns of Europe were imbued with the spirit of feudal or commercial oligarchy which they supplanted. The conflicts between the merchants and craft guilds, or again the class opposition among the artisans themselves, have not been marked in India. Nor is the Indian guild system a local system, as it had been in Europe, where the guild was confined to a particular town. In India the ramifications of guild organisation extend throughout the whole region in a system of industrial management in concentric circles, binding together men of similar vocation. It is this federal aspect of guild life and organisation which will naturally need emphasis in future reconstruction. On the bed-work of living communal habits and traditions of the people, and on flourishing guilds and village communities which represent a tendency that is deep-seated and spontaneous over the whole country, a co-operative commonwealth can be reared. This must call for a sympathetic understanding and utilisation of the

constructive communal spirit of the people. It is not possible to form a set scheme of action as to the precise method by which this social anticipation may be realised; but the main task will be the gradual transformation of castes, guilds and village communities into co-operatives. And in this transformation we must begin with the region where already exist some local initiative and functional management.

Regional Co-operation.—The Region in India, which is founded on a basis of affinities of language, race, tradition and custom, is an old and essential division within which civic sentiments easily crystallise. Regionalism in education, art or industry has been a characteristic social heritage of India, with its diversities of races, peoples and cultures. The partnership of village communities and guilds in economic life must now be extended in further and greater measure over a whole region. Regionally organised, they will work a given industry to far greater advantage than can each work it separately, or a scheme might be carried out on a large scale for some improvement which, on a smaller scale, would produce little or no result, such as an irrigation dam or an embankment of the region, an organisation to reclaim a marsh or to fight malaria, a central power-house to electrify a large zone by means of water-power or local coal-bed, distributing current for the looms and the lathes of the whole zone. Or, again, the guilds and co-operative societies might be developed into regional associations of producers and consumers, which would eliminate the middleman and bring urban and rural production into more intimate relation with the needs of town and village. In Italy, for example, there are Regions where village communes have entered into partnership for land improvement or for public services, and the Government has encouraged and even requested such partnership. There are also inter-provincial federations of agricultural and industrial

co-operative societies which have an excellent record, and there are public or semi-public bodies in which political parties of different shades of opinion work together for a common end. The well known Co-operative Societies of Ravenna already have offered to hand over their land and all that they possess without indemnity, to form a Regional Agricultural Demesne, provided that other local bodies would do the same and the State would confer upon it all unclaimed, uncultivated or ill-cultivated land within the Region. In South and Western India the guilds mould the whole social life of their caste or region and develop a professional conscience which is an important factor in social progress. In a certain sense the castes are local federations on a minute scale ; some of them are linked with the regional federation as groups having the same social standards of action and of ideals.

Regional Reconstruction for India.—Guilds and castes have all their collective capital, which is in the full sense a social asset because invested and administered in the interests of the community of the whole Region. Thus, directly and indirectly, they influence the interests and ideals at work in their districts. There are many activities, actual or possible, which can be worked regionally, and public initiative can be evoked more easily round definite regional tasks. Education in lower or higher grades would set itself definitely to the needs and possibilities of regional reconstruction. The regional and the co-operative spirit are very much stronger to-day and have survived the recent centralisation. It is to the uplift of the regional and communal spirit from its narrow range that we look for a solution of the problem of industrialism and the making of the new society. It is thus that the forces of renewal will spring from the country population. They will transform, through the guild and regionalist idea, the structure of modern

industry and build its characteristic constitution. They will renew ancient forms of solidarity and evolve a new economic democracy which will be more successful and life-maintaining than that realised either by State Socialism or by Communism.

NOTE

The Isolation of the Villager.—As an occupation farming has dealt largely, if not exclusively, with the growth and care of plant and animal life. Broadly speaking, the farmer has been engaged in a struggle with nature to produce certain staple traditional raw foods and human comfort materials in bulk. In striking contrast, the villager and city worker have been occupied always in making things, or parts of things, out of such impressionable materials as iron, wood, clay, cloth, leather, gold and the like, to fit, suit and satisfy a various and increasingly complex set of human desires ; or they have been dealing direct with a kaleidoscopic human mind, either in regard to things or in regard to troubles and ideals of the mind itself. This constant dealing with persons in business will account even more than mere congestion of population for the complex organisation of city life.

The social problem of the farmer seems to be how to overcome the inevitable handicap of a social deficiency in the very nature of his occupation, so as to extend his acquaintance with men ; and, secondly, how to erect social institutions on the land adequate to reinforce his individual personality so as to enable him to cope with his perplexities.

Occasions must be created, plans must be made, to bring people together in a wholesale manner so as to facilitate this interchange of community acquaintance. Especially is it necessary for rural children to know other rural children. The one-room district school has proved its value in making the children of the neighbourhood acquainted with one another. One of the leading reasons for the consolidated and centralised school is the increased size of territorial unit, with more children to know one another and mingle together. Inter-visiting of district

schools—one school, teacher and pupils playing host to a half-dozen other schools, with some regularity, using plays and games, children's readiest means of getting acquainted—is a successful means of extending acquaintance under good auspices.

If large-scale acquaintance—men with men, women with women, children with children—in a rural community once becomes a fact, the initial step will have been taken for assuring the rise of appropriate social institutions on the land of the community. (It is well known that periodical *melas* and pilgrimages in India are very popular and serve to some extent the purposes of modern industrial and agricultural exhibitions. These are now being organised on the old lines with great success.)—(Park and Burgess: *Introduction to the Study of Sociology*.)

CHAPTER XVIII

LABOUR PROBLEMS

Industrial Revolution and its Associated Evils.—The social evils which the Industrial Revolution brought in its train in England, and then in other countries in Western Europe, have led many writers to the advocacy of drastic measures of reform which are as old as industrialism itself. Among these evils the most important seems to be the unequal distribution of wealth and opportunities inevitable in the capitalistic system. The use of large machinery, which the workers cannot own or manage, has meant the rise of a strong *entrepreneur* class. Wages have increased, the hours of labour have been curtailed, the standard of comfort has risen, but there is still a large amount of misery; while unemployment during times of industrial depression means starvation. Thus the Socialists condemn capitalism as class rule in industry and social life which keeps the mass of the people starved in all those qualities that are needed for culture and good citizenship. Another evil of industrialism is the break-up of organised village life and production, as a result of which society is moulded after a uniform pattern, the standards of which come from a few huge cities. Thus, the great industry, like the centralised State, has proved an enemy to local life and creativeness, without which culture tends to become dull and barren. The decline of agriculture and village industries has proceeded everywhere with capitalistic development and concentration. Throughout the East village collectivism

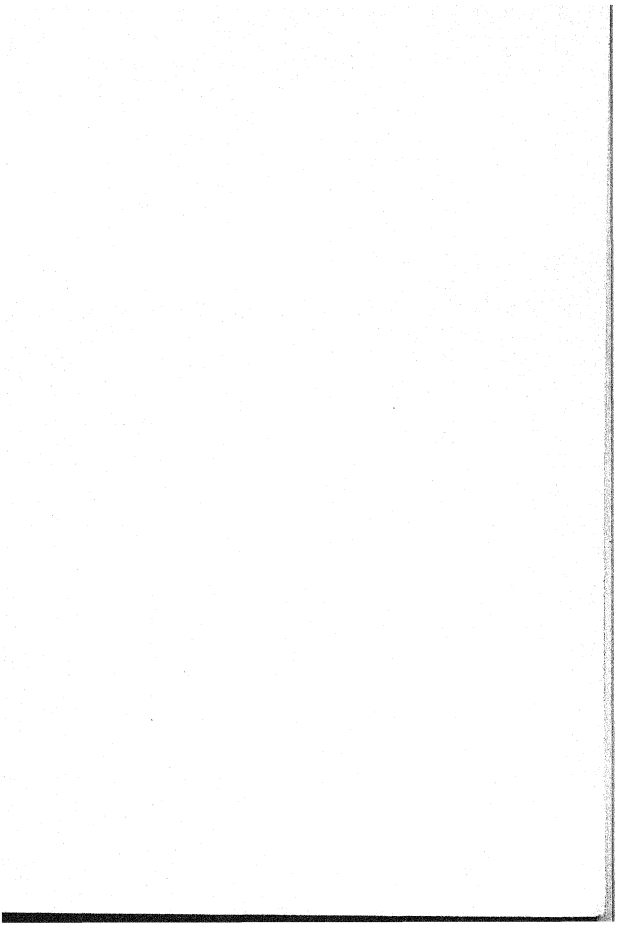
and peasant farming are, however, most characteristic features of economic life. Industrialism, which is now on tour round the world, has touched only the fringe of Eastern life in the ports and commercial centres, and in the mining districts. But the competition with Western manufactures has ruined many of the domestic and village arts and handicrafts which served formerly as industries supplementary to the main occupation, *viz.*, agriculture. The economic position of the peasant has deteriorated further as a result of disruption of joint families and village communities due to Western legal influences. Thus, households have split up until in our times they have reached the size—different in different conditions—which has made communal life difficult. Industrialism and the urban type are in consequence dominant, though very recent; but the habits of Eastern life are both agricultural and communal. The disruption of village communalism, which has accompanied the introduction of industrial and capitalistic interests in every society, has now given rise to a class of landless wage-earners. These recruit the industrial population or crowd miserably in towns, or emigrate in large numbers. They have brought to light in our society slum-life, family breakdown, unemployment and labour unrest—evils commonly associated with capitalistic production in the West.

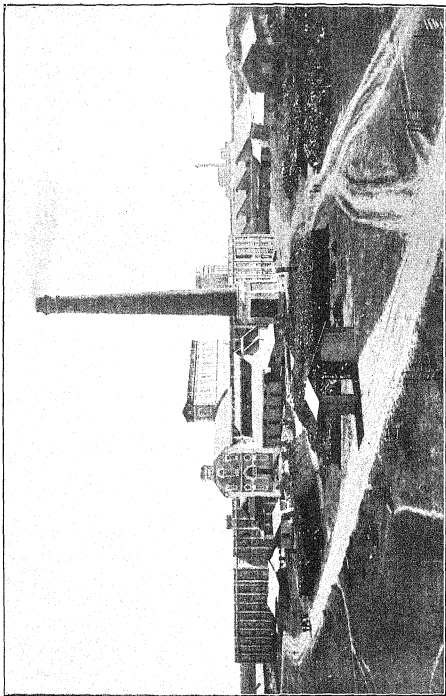
Japanese Industrialism.—In Japan the pace of industrialism is much greater than anywhere else in the East. Forty years ago everything was made under the domestic system. Thus, the development of Japanese industry is remarkably recent and rapid. The factories are obliged to start with absolutely unskilled labour. This over-supply of unskilled labour, together with other industrial and social conditions, has increased the manufacture of cheap goods and led to the payment of low wages. A feature of Japanese industry is the predominance of women and girls

which has told against the time-honoured domesticity. In textiles there are five times as many women as men operatives. Of the total number of operatives women and girls represent more than 58 per cent. At the end of 1917 there were 99,000 girl operatives under fifteen years of age and 2,400 under twelve. Of this large mass of shifting, immigrant girl labour a small percentage go back to domestic life; the great majority fall victims to disease and vice, or are absorbed in dubious walks of city life never to return to their village homes.¹

Unskilled Labour in Japanese Mills.—The mill-workers in the Tokyo prefecture come from remote parts of Japan, and the girls—and three-quarters of the employees of the woollen industry are girls—are merely on a three-year contract. The girls arrive absolutely inexperienced. Even in England it is considered that it takes two or three years to make a worker skilful. Within the three years for which the Japanese mill-girls or their parents contract, as many as 30 per cent. leave the mills and, appalling fact, from 20 to 25 per cent. die. Not more than 10 per cent. renew their three-year contract. Therefore, there is—at present, at any rate—little real skilled labour in the factories. Another difficulty is the absence of skilful wool-sorters. Even before the war a good wool-sorter commanded in England from three pounds to four pounds a week. Experts suggest that it takes half-a-dozen of the unskilled girls to do the work of an English mill-girl. It is much the same with male labour. An English worker may be expected to produce work equal to the output of four Japanese hands. In a pre-war publication of the United States Department of Commerce it was stated that the cost of cotton mills per spindle is in England \$32, in the United States \$44, in Germany \$52, and in Japan \$100. Another difficulty which hampers the

¹ *Report on Japanese Labour*, White (Cmd. 511).





Where the machine supersedes human labour.

Japanese woollen industry is the prevalence of illness at the factories. They must have in consequence about 25 per cent. more labour than the work requires. It is alleged by competent authorities that 50 per cent. of the employees in the mills suffer from consumption. Dormitories are in defiance of hygienic rules. Many girls sleep ten in a room of only ten-mat size. In most cases only half to one *tsubo* (four square yards) is allotted to one person. The girls have weakened constitutions as the result of their factory life, and when they marry have fewer than the normal number of children. The general result of factory life is degeneration. The industrial development of China has been much slower than that of Japan, but of recent years it has been remarkably rapid. On the human side, the situation has therefore raised similar urgent problems.

Industrial Fatigue.—It is seldom realized that industrial fatigue is not only a health hazard of the first magnitude and a cause of accidents, but also leads to a reduction of output. Apart from the social conditions of factory life which conduce directly to the deterioration of the people, the severe strain of long periods of work tells heavily on the health of the operatives and leads to accidents as well as diminution of output. The long hours of labour mean fewer opportunities for rest and recreation, monotonous work and unwholesome employment as well as low standards of living. The hours a man works, indeed, frequently determine the character of his home and domestic life, his pleasures as well as his capacity to resist exploitation.

Legal Working Hours.—The weekly hours of work in factories as fixed by law in various countries are :
48 hours—Great Britain (textile mills) ; Norway ; Germany ; Australia ; Russia.

54 hours—Assam Tea Plantations for women up to eighteen years.

60 hours—India (72 hours before July 1, 1922).

98 hours—Japan (men and women workers).

The 12-hour day is in force in Japan as well as in the textile factories of the East Indies (in the other factories 11 hours). The women in the factories work in two shifts of 10 to 12 hours each. Though night-work for women and girls is proscribed by law, spinning mills are exempted till 1931.

Indian Factory Life.—The Indian Factory Act allows a working day of 10 hours' full work, the only stipulation being that there must be an interval of half an hour, in the course of the day's work, during which the machines are not to be used. The Indian mills run for 60 hours per week, the mills in England and America run between 42 and 48 hours per week, the mills in Japan run between 98 and 112 hours per week. The Indian Mines Act, as amended in 1923, restricts the term of labour to 60 hours per week for above-ground and 54 for below-ground workers; raises the age of children employed from twelve to thirteen years, prohibiting the employment of young persons and children below-ground, and prescribes a weekly day of rest. In some of the Indian mines, however, men and women labourers are known to live underground for 22 to 24 hours a day, or 132 to 144 hours per week, food being brought to them in coal-pits. In some of the old-fashioned small-scale collieries of Bengal the tendency to work long hours is due to the difficulty of entering and leaving the mines. In actual practice, men and women work from 16 to 20 hours, the men cutting the coal and the women filling the tubs. In the case of textile workers it is provided that no child (defined as a person below the age of fifteen) may be employed for more than 6 hours in any one day. The employment of women and children, and also of adult males in factories where the shift system is not in force, has been prohibited excepting between 5.30 a.m. and 7 p.m. Overtime

work in the mills, mines and plantations, which is avoided by employers in the West so far as practicable, is the rule in India. Short-time work also is by no means rare. In Bengal the jute mills are open four days a week only, to keep down production—to the detriment of the workers who have to be without wages in enforced idleness. The Indian holidays, which are connected with seasonal fasts and feasts, and interwoven with the whole texture of social life in India, are not recognised as free days for working men. In America women work not more than 9 hours a day. In India the limit is 10 hours. But very often overseers encourage both men and women workers to work in additional shifts, for which they receive extra pay. Multiple shifts, indeed, lead to many abuses. Under this system half-timers are found to work in more than one mill on the same day. This abuse prevails chiefly in areas where two or more mills are adjacent. It is impossible for outside inspection to cope with the abuse, because of the complexity of shifts under the multiple shift system. In the jute mill industry of Bengal the mill hands are obliged to work a complicated system of shifts of 3, 4 or 5 hours, instead of 6 continuous hours. According to an official report, the present complicated system of shifts permits of no home-life and is not conducive to health; and education, if introduced, for that reason would have little success under the present arrangement. The poverty of parents and the dishonesty of *sardars* or overseers lead in many cases to the employment of children and other abuses. Not merely the *sardars*, but also the timekeepers, through whom labourers, adult or young, get employment, exploit them. Half-timers, both boys and girls, also lead to trouble, especially when they work near one another. The girls play about while the older boys show restlessness. Under the new Factories Act, the day's work for a half-timer is limited to 6 hours,

and the minimum and maximum age raised to twelve and fifteen years respectively. But this rule does not apply to children already employed in the mills before 1922. Curjel observes: "The work undertaken by half-timers as winders involves spurts of great activity and also the carrying of loads of fairly heavy bobbins. The majority of child-workers show evidence of malnutrition and physical strain." The children of both sexes under fourteen years old number 140 per 1,000 adults in Indian industries and establishments. About 61 per cent. of the total number of children employed in organised industries are boys, and the girls almost equal the boys on the plantations and in the mines and form about one-fifth of the child labour in the textile industries. In the last decade children have decreased in the plantations and textiles and increased in the mines.

Mill-provided Schools.—Since no children now may be employed under twelve years of age, attempts are made in a few of the mills to provide small schools for children of industrial workers, as well as for half-timers. Indeed, the object of raising the minimum age of factory children to twelve in the Factories Amendment Act of 1922 will largely be frustrated if provision is not made for their education during the free hours. Here and there mill-owners have set up schools for children who are connected with the mills either directly or through their parents. Attendance, however, is slack and the instruction given not much sought. In Bombay the municipalities, other than the city of Bombay, have set themselves to the task of imparting compulsory education with certain safeguards. Difficulty, however, will be felt on account of the poverty of the workers. In many mills the sewing department is partitioned off from the factory, and it is the usual rule to allow young children who are under twelve years to sew alongside of parents or relatives, to whose account the work is credited.

Conditions and Wages in Indian Mills.—The long periods of work are particularly irksome in certain seasons in the different provinces, and there is as yet no attempt to adjust the time-table to different seasonal conditions in different parts of India. The moist heat in the jute mills of Bengal and the cotton mills of Madras is most trying for the women and children, and fainting is a matter of almost daily occurrence. In many mills there is no provision for even thorough ventilation or change of air. The lighting arrangement is as a rule inadequate. Sometimes the lighting is insufficient or the glare considerable. Northern India, with its dry climate, is a dusty place under the best conditions; in ginning mills, wool and brush factories in Cawnpore, in cotton mills in Indore and Nagpur, and in railway workshops in Lucknow and Lahore, it tends to be intolerable. Sore eyes during the hot season are most frequent, while debility and dysentery are fairly common. Thus, there is loss of efficiency of the workers from many preventable causes. The provision of guards for machinery is inadequate, and this is responsible for a large number of preventable accidents, especially in the case of women and children. The relation of industrial fatigue to the number of accidents towards the end of the day's work and to output has not been investigated in India. The "safety first" campaign, which already is an institution in Japan, will be of considerable value in this country. In many cases, again, the output would improve by arrangements for seats. In the jute mills, for instance, it is only in the hand-sewing department that the operatives sit at their work. There is also no provision with regard to the taking of meals by workers. In many cases workers have a long distance to go back home during the midday interval. Where there are multiple shifts, they have to bring their food with them and eat it on the mill premises, for which no special

provision is made. Most of the mills have grain-shops on the premises or in the immediate neighbourhood. The shopkeepers give credit until the next pay-day. Here and there co-operative stores have been established in which reasonable rates are charged for grain, cloth and other necessities, but usually the grain-dealers exploit the operatives, who have to live an almost hand-to-mouth existence as soon as the pay-day is over. Nor are the wages sufficient to cover more than the bare minimum of subsistence. The scanty wages are hardly adequate for the consumption of meat and fish, the protein foods necessary during strenuous work. In Bombay, Ahmedabad and other centres, the majority of men workers earn between 12 as. and Rs. 1.8 per diem. Half the number of men in Sholapur earn under 12 as. Nearly half the number of women workers in Bombay and Ahmedabad earn between 12 as. and R. 1 a day, and in Sholapur over nine-tenths earn only 8 as. a day. About 45 per cent. of the youths and children in Bombay earn between 12 as. and R. 1; in Ahmedabad more than 60 per cent. between 4 as. and 8 as., and nearly 58 per cent. in Sholapur earn less than 4 as. In the Bengal jute mills, the average male worker earns between Rs. 3 and Rs. 4, and the average woman worker receives a weekly wage of Rs. 2.8. In many cases a small percentage is deducted by the *sardar*. The enormous rise in the cost of living leaves little margin for comfort, while the absence of family life under dreary and unwholesome conditions increases the nervous strain, and makes dissipation almost inevitable. In the plantations the wages are still lower. The monthly rates in Sylhet Tea Gardens for a *hazira* (attendance) consisting of twenty-seven working days are Rs. 6, Rs. 5 and Rs. 3. In Assam they are Rs. 8, Rs. 6 and Rs. 4 a month, though the planters make certain concessions, *e.g.*, for housing, medical attendance, cheap rice and clothing, grants of land for cultivation,

which would be worth R. 1 a month to each worker. In many cases a single contractor has a partial monopoly of labour supply to a given plantation, and he has the men very much in his power. Sub-contracting occurs, and the labourer is fleeced every time an intermediary is introduced. Though these workers are mainly recruited by the contractors from semi-aboriginal communities and their standard of living is low, yet it is obvious that 4 as. per diem is hardly sufficient to keep them from starvation during a period of high prices which has been synchronous with the depression of the tea trade.

The Indian Coal-miner.—It is estimated that an Indian miner works on an average 118·8 tons of coal per year; whereas a Japanese miner raises only 96 tons, a Belgian, noted for his mining skill, 130 tons, and a British miner 196 tons. These figures give some idea of the efficiency of an Indian miner so far as his working days are concerned. An Indian miner's wages are, however, very low, taking piecework as the basis of remuneration. He is paid about R. 1 per ton, calculated on 10 as. or 10d. per tub of coal cut and raised above ground. A Belgian is paid at least eight times, a Japanese five times, and a British miner at least fifteen times as much. The small collieries often recruit direct, sending out *sardars* for the purpose as necessity arises. But the larger collieries recruit through contractors. The contractor as a rule contracts not to supply labour, but to cut coal and deliver it on the surface at a fixed price, which allows him a profit of about 4 as. a ton on large contracts and 6 as. a ton on smaller ones. The contractor has often to make advances to the labourers of as much as Rs. 30 (representing twenty to thirty days' earnings) and has to take the risk of their leaving before the advances are paid off. A committee appointed in 1917 by the Local Government to inquire into the housing of labourers on the collieries of Bihar and Orissa was of

opinion that "there are no amenities in the coalfield. The *dhauras* (lodgings) are neither beautiful nor healthful. The labourer enjoys no privacy in his domestic life. He has to carry his personal belongings about with him (even down the mine) for fear of theft. His only pleasure is that which is to be purchased at the liquor-shop. There is no inducement for him to remain at the colliery for a minute longer than he can help." Prolonged work in darkness, sometimes under water knee-deep, the atmospheric pressure and the fumes of the kerosene oil-lamp, tell more heavily on the health and spirits of miners in India than in the temperate countries. The liquor-shops are also too near and the miner drinks on an empty stomach, and, being tired and disinclined for exertion, is apt to remain there drinking. The total number of licences for sale of country spirit and *pachwai* in the subdivision of Asansol (the largest mining centre in Bengal) were recently as follows: 26 country spirit shops and 120 *pachwai* shops, which represented a value of Rs. 336,403 in the case of country spirit shops, and Rs. 1,217,611 for *pachwai*. The population of miners under the Asansol Mines Board of Health is 48,642. Assuming that about 90 per cent. of the total value of liquor is consumed by actual miners, a miner spends about Rs. 30 a year on his drink, or Rs. 2.8 a month. His wage is Rs. $1\frac{1}{2}$ per day for himself and his wife, who helps him as a carrier. This works out at 12 as. per head per working day; he works at present about sixteen days a month and therefore receives Rs. 12 a month. Owing to the recently increased price of country liquor, a miner's drink bill is between 2 as. and 3 as. a day, which is practically half of the wages he receives. Prostitution is another crying evil in the collieries, while the general insantiation and pollution of water during summer lead to epidemics. There is no serious attempt to tackle the housing question, because the original Bengal Settle-

ment Act does not provide for dealing with housing in colliery districts. Altogether, the subjection and degradation of labour in the mining industry are a most serious evil, yet the industry is one of the most important in India ; 190,000 miners are employed in Bengal, Bihar and elsewhere, while the output is 21,000,000 tons, as against Belgium's 22,750,000, and Japan's 28,000,000.¹

Drink Consumption an Index to Industrial Conditions.

—The denial of the primary conditions of health, leisure and comfort both in mines and in factories naturally has a most depressing effect, and it is to forget their misery due to inhuman conditions of life that men drink and become brutes. In the Report on the Administration of the Excise Department we find that the consumption per head in drams (London proof) of country spirit in Bombay increased by 47 per cent. in 1920, 51 per cent. in 1921 and by 32 per cent. in 1922 as compared with 1914. The Commissioner adds: "It is clear that there is a very definite connexion between the conditions of labour and consumption of alcohol. This may very probably be due in great measure to the conditions under which the working classes live in Bombay. There seems reason to suspect that it is the influence of Bombay city which has produced an increase of consumption in the adjacent districts and in Ratnagiri." In another place in the same report he points out that, "while the policy of Government in keeping up prices of liquor and reducing the number of places at which it is sold has succeeded in actually reducing consumption among the agricultural classes, there is a distinct increase in drinking noticeable among the industrial classes. The higher consumption in urban areas may no doubt be ascribed in part to the nature of the occupation of the working classes and the conditions

¹ For these data, I am indebted to my friend Mr. K. C. Ray Chaudhri, Labour Member, Bengal Legislative Council.

under which they live." For the year ending March 31, 1921, 4,500,000 people in Bombay city and the four neighbouring districts, which are the main source of Bombay's labour, consumed about one and three-quarter times as much country spirit as the 11,500,000 in the rest of the Presidency, excluding Sind. It is estimated that, for those families whose members drink, the average expenditure amounts to at least from 8 to 10 per cent. of the income. Not less than 47 per cent. of the families of labourers investigated in Bombay are in debt, paying interest usually at 75 per cent. per annum and in a few cases at 150 per cent. The indebtedness of the family extends ordinarily to the equivalent of two and a half month's earnings. The average expenditure for interest amounts to nearly 3 per cent. of the total monthly expenditure. Drink, indebtedness and lack of bargaining power constitute a vicious circle from which there is no escape. Thus, the development of industrialism in different centres in India has been associated with the rise in alcoholism, as has been the case in England and Germany.

Women Labourers in India.—Industrial employment is breaking up the home, which is becoming a place of hurried meals and relaxation following over-work for the whole family, including the boys. Nor do the workers find meals ready at home when they return from work. The meals are prepared hastily by the women before they go to, or after their return from, the factory. In many mills under-age children and infants are brought by their mothers to the mill premises. Very often regular doses of opium are administered to stop their crying. Here and there *crèches* or day nurseries are established in charge of trained nurses, who look after under-age children. This not only benefits the young children but also improves the efficiency of women workers when they are relieved of the care of their children. In some

mills a varying amount is given to workers who are off duty through illness. Some collieries allow R. 1 to the worker's nearest relative in case of an adult or infant death, to provide the funeral cloth. Certain factories and mines give a small sum to workers on the birth of a child. There is, however, no legal protection for women about to be confined. Women are known to give birth to children while at work in the mills. It has been estimated that a mother who is not given rest for three months before her confinement brings into the world a child less than six pounds in weight. Some of the larger works are known to give several days' pay as maternity benefit to women workers on condition that the mother does not work during that time. In the total number of establishments, just over a quarter of the workers (including children) are females, all but 8 per cent. of them being unskilled labourers. The adult women (unskilled) number 508 per 1,000 adult men. By far the majority of women labourers, *viz.*, 322,000 out of 540,000, are on the plantation, where their proportion per 100 men is as high as 94. Women are also numerous in the textile and mining industries, and in the former there are 408 adult women (unskilled) per 1,000 men and in the latter 521.

Welfare Work as Efficiency Work.—On some of our estates and plantations medical relief is given, since on account of the cost entailed by recruitment each worker represents a considerable outlay. Managers insist on regular visits to the workers' houses by their doctor and give an allowance to workers on the doctor's sick list. Thus, wherever the recruitment involves some outlay and labour is scarce, the value of an industrial worker is recognised by the provision of sanitary conveniences, medical relief, sickness allowance and even of maternity benefit for women workers. The establishment of hospitals and dispensaries, co-operative societies and grain stores, the

employment of health visitors, nurses and supervising medical officers, the provision of healthy recreations and of educational facilities for the children of industrial workers and of *crèches* or day nurseries for infants ought to occupy the attention of all social workers in the industrial centres.

In 1922 the Workmen's Compensation Bill became law, by which compensation is to be given, as in Britain, for personal injury by accident arising out of and in course of employment. It is also to be given for such diseases as anthrax, lead-poisoning, phosphorus poisoning, etc. Furthermore, there have been initiated the humanistic activities which are regarded as Welfare Work, but which are also from the economic standpoint to be classed as efficiency work, because they react directly and substantially on the physical contentment and efficiency of the operatives. Much yet remains to be done, and a good deal depends upon the co-operation of the employers, without which not only inconveniences and hazards to health but also irregularities and abuses continue to exist, notwithstanding the stray prosecutions instituted year after year. Whether in the segregation of sexes in different departments of the factory or in the provision for *crèches* and hospitals for babies whose mothers are at work; whether in the careful planning of the recess intervals during the working period or in the arrangement for conveniences for meals, washing, etc., adapted to Indian habits of life; whether in a scheme of promotion and bonuses or in the provision for education and opportunities for social life and recreation, the employers ought not to ignore public opinion. Scientific thought and a social conscience in these matters, however, are not yet aroused.

India's Labour Problems.—Meanwhile, epidemical strikes, involving sometimes more than two lakhs of workers, have been frequent. Such strikes are often declared without notice and are not accompanied by

any systematic demands of the workers, nor are these always guided by chosen or tried leaders with sufficient influence to enforce any settlement which may be made; yet it is not seldom that the strikes are settled by an increase of allowance, grant of a bonus, reduction of workers and other minor concessions, while the increasing solidarity of the employees and their capacity to remain on strike for considerable periods, despite the lack of any visible organisation, are proofs which no longer can be ignored of the newly aroused self-consciousness of labour. Cases are not infrequent, however, where there has been enormous hardship to the workers due to a strike which could have been prevented or ended easily by a clear definition of grievance and a closer understanding between the mill-owners and the operatives. There are not many labour unions in India which can articulate the demands of the workers and serve as a medium of communication between the contending parties, as well as with the outside public. In Bombay, Ahmedabad and Madras there have developed gradually the beginnings of a trade union movement. But so far there are no proposals for any standard scale of wages for different grades of labour or any definite responsibility undertaken for discharging the duties of trade unions, though the privileges of the latter are claimed. In most cases the unions are little more than strike committees, who raise some subscriptions and who are relied upon in time of trouble. After a strike is ended the union concerned dwindles and in some cases disappears altogether. But there are some organised unions which are now factors to be reckoned with, *e.g.*, the Unions of Spinners and Weavers in Ahmedabad and Madras, the Union of Jute Mill-hands at Kankinara and the R. and K. Railwaymen's Union at Bareilly. These have waxed stronger as clerks and assistants joined the labourers, but the *sardars* usually keep aloof and often recruit new labourers in the midst of a

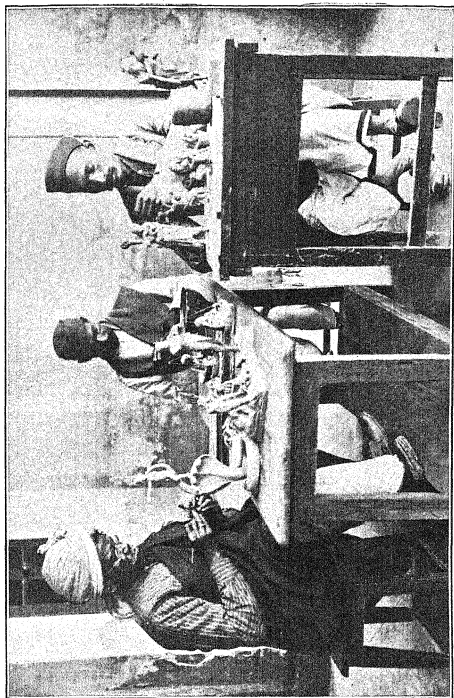
strike. The labourers, as a rule, however, have no reserve power; they cannot spare much out of their monthly wages as subscriptions to unions, and their capacity for indebtedness to local shopkeepers in case of unemployment is very limited, though they have the advantage over Western mill-hands that they can go back to the land and there prolong endurance to the utmost. Again, when the mills are closed and thousands of labourers hang about the *chawls*, the *bustis* and the streets eating and drinking what they can get and using the latrines and bathing-places, epidemics break out. Such epidemics drive workers back to their village homes by thousands. The few that do not possess any land and cannot give up the coarse stimulations in crowd life move from mill to mill, and from mill to mine and plantation. In India we have not as yet a class of trained operatives who might be easily organised, nor are the industrial conditions such as to create the demand for industrial training. Conscientious labour leaders also are wanting who might live amongst the labourers, know their hopes and fears and enjoy their confidence. It is they who, in time of trouble, can keep clear the economic issues at stake. On the other hand, unions are not yet recognised by law nor registered, so that there is great difficulty in collective initiative and expenditure. In many industrial centres caste *panchayats* act as trade unions, but are very limited in their scope and activity. Meanwhile, the spread of the strike epidemic has caused grave anxiety and led to a discussion of the methods of securing industrial peace. Proposals for establishing arbitration councils for the prevention and early settlement of labour disputes, or industrial boards for the determination of a minimum wage, have been formulated. Conciliation boards have been organised in some provinces, while the question of popularising work committees on the lines of the Whitley Report has engaged attention. Large num-

bers of working men are now enfranchised, and their sufferings and troubles evoke ready sympathy from different classes of leaders, but sagacious help and guidance are not easily available. We are now on the eve of a great industrial expansion, but there is something dreadful in the expectation that mill-labourers, men, women and too often children, who are overworked, underpaid and allowed to work and exist under conditions destructive to health and *moral*, have no resource during unemployment and no organisation to articulate their legitimate grievances. Drink and vice are increasing in our industrial centres, being encouraged directly by unwholesome housing conditions and the terrible excess of males over females, which means that most of our labourers, nearly all of whom are married, miss the restraints and comforts of family life and are ambitious only to earn enough wages to take them home. Nor are the prospects of agricultural labour in the villages sufficiently attractive to keep them there long on the scanty wages and casual employment that field-work now offers. Only a newly aroused industrial conscience, an effective leadership and a strong public opinion can hope to grapple these problems with which is connected the whole industrial future of India.

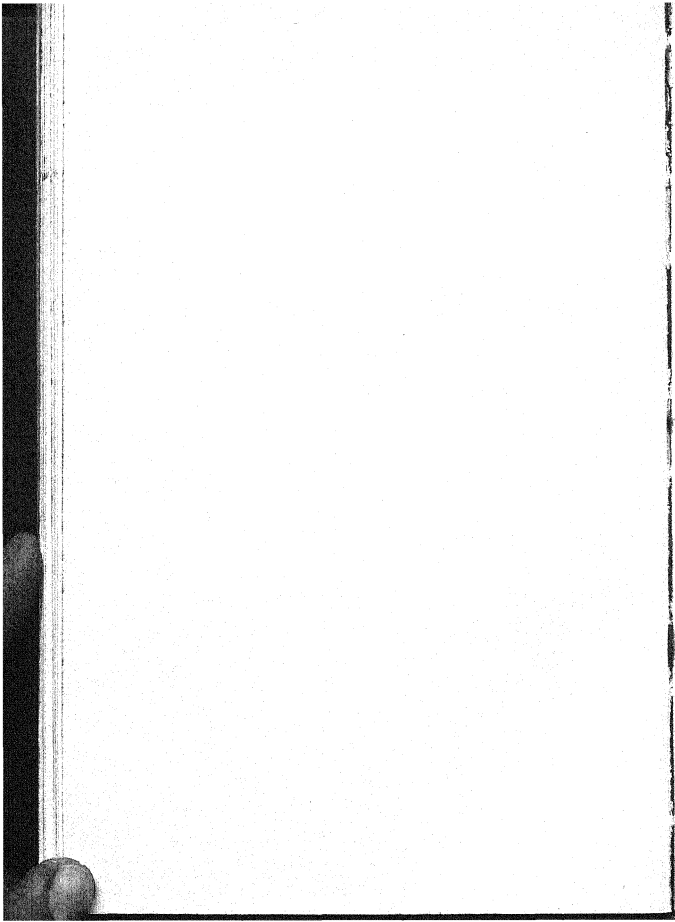
CHAPTER XIX

LINES OF ECONOMIC DEVELOPMENT

The "Green Rising" and its Importance.—The Industrial Revolution brought into being a new organisation of society and a new labour problem. But the victory of the new system of industry has not been so universal in the West as often is supposed. In Central and Eastern Europe, for instance, the people are not yet industrialised and urbanised. There the peasantry is still found organised in patriarchal households and village communities; there is no hard-and-fast labour class as there is in England, for instance. Even in Germany more than half the inhabitants were villagers in 1900, while in the Austro-Hungarian Empire 74 per cent. was then rural, in the Balkan countries more than 80 per cent., and in Russia 86 per cent. In all these countries the peasants outweigh the descendants of the landlords, both by their numbers and by the wealth which they produce, using and controlling their own means of production. It is in Central and Eastern Europe that there has emerged a social phenomenon which will be as important in its consequences as the Industrial Revolution or the Great War—the upheaval of the peasantry called the "Green Rising." This has meant a vast defeat for Bolshevism and large industry and a vast victory for the peasants, who have won it in a sort of awful silence. Not merely in Russia but also in Italy and South-Eastern Europe the peasants have fought successfully the communists and the capitalists, and now are building up an economic structure based on



A rehabilitated handicraft : clay modelling in Lucknow.



small ownership and small capital in agriculture and industry. This change is passing visibly over the whole of Europe and has its lessons for every country excepting those unhappy countries who have almost wholly ceased to be agricultural.

The East for the last few decades has been recalling the hey-day of the Industrial Revolution, but has now realised its great social cost. Thus, she can ignore no longer the hardly-won lessons recorded in half a century of social legislation and humanitarian effort in Europe, her recent experiment and tendency away from Capitalism, and the new uprising of the peasants against "Big Business," now clearly discernible throughout the Continent.

Communalistic Ideals of the East.—In China and India the self-directed village community and industrial guilds still prevail, and the ideals and structure of co-operative production, guild-socialism, self-government in industry and collective farming are worthy of serious consideration. The settled habits of the population, the instincts of attachment to the home and the soil, the traditions of mutual help and neighbourly offices which naturally spring up in the village commune, have developed into a rich constructive communalism in a deeply socialised and humanised life and have determined the specific type of Eastern economic organisation. The prosperity and political power of cities and towns never have been able to eclipse the self-government of villages, clans, castes or brotherhoods, the foundations of Eastern polity, and the self-direction of agriculture and industry in village communities, and industrial guilds, the foundations of Eastern economics.

Eastern Types of Industrial Organisation.—Dr. Marshall, in discussing the industrial dominance of the Western nations, has pointed out how physical features and social history have determined the type of leadership obtained by each of the countries in

Europe. The physical features of France, for instance, have not favoured industrial concentration ; and, with the early suppression of the middle-class, French industry mainly was given to cheap local products on the one hand, and on the other to fine goods embodying some artistic feeling and individual judgment. France, which owes relatively little to the aid of mechanical power in manufactures, affords the chief instance of a leadership based on individual skill and individual judgment, and sets an example to Eastern countries, not merely in her most successful co-operative undertakings, but also in her special superiority in delicate industries. If variations in industrial evolution are true of Europe, which has exhibited on the whole a unity of civilisation and similarity of social institutions among each nation, it appears that in Asia, where the industrial and social structure is so different, the types of industrial organisation will follow neither the large production of the nineteenth century in Europe nor the new massive production of the United States. In the communal societies of East Asia natural associations and alliances of village communities, guilds and brotherhoods grew into a system instead of the grouping for mutual protection of men and large estates, which has supplied the framework of the European economic and social organisation. Chinese land always has been cut up into small holdings divided among all the sons of the family. They are chiefly freeholds and cultivated intensively. There are no great permanent estates as in the Western World. In China, Japan and India the system of peasant proprietorship has combined with the economic solidarity of the family to keep alive cottage and village industries, which also have developed a system of travelling brokers and middlemen, who make their products accessible to the markets. The patronage of the temple, monastery and court has been the steady support of artistic industries even in the country

districts, and the Eastern peoples, particularly the Japanese, who have a rich endowment of the artistic instinct and delicate sensitiveness, have applied common and skilled labour to delicate metal, wood and textile work in a way unknown to popular art and craftsmanship in the West. In India it is the hereditary and caste tradition which has contributed to maintain high excellence in artistic handicrafts. Everywhere it is the guild which has laid down regulations in the interests of the particular craft or industry, and it is the sense of social co-operation developed in the compact life of the village community or clan and family village which has prevented the industrial guilds from warring with one another or conflicting with the interests of the consumers as they did in the medieval West. In the East, a strong and rich middle-class has existed in the cities only, where the workshop system has developed out of a more specialised organisation of the handicrafts, producing common goods for a wider market. In Japan, the communal bond has been very much weakened by the old feudal system and by the new centralisation, an outcome of the impact with Western powers, which has compelled her to accept militarism and industrialism, however uncongenial they may have been to the temper of the people. But in China and India, whether in the more or less autonomous villages or the self-governed industrial and commercial guilds and associations, communal habits and traditions are very much alive as potent forces of economic renewal. The phenomenal success of the co-operative movement within a decade or two in India and of the great mercantile guilds in China in organising her commercial credit may be quoted as instances of the strength of their old and essential communalism.

Survival of Small-scale Industry in the West.—In industrial reconstruction in the East we always look to England and America as models. Even in these

countries, in spite of the tendency towards capitalistic industry and mass production, there is an overwhelming though often ignored, testimony to a strong survival and growth of small plants as a counter tendency to concentrated capitalism.¹ In England, in the majority of trades, the number of persons employed per establishment commonly falls below twenty. Further, in trades suitable for small-scale operations there are found to be about as many individuals who work on their own account as there are of those who employ others. The immense number of small undertakings, apart from the railways, docks and gas-works, and the great industries in which mechanical production has been highly perfected, is still the outstanding feature of modern industrialism. In America, in 1900, the total number of hand-trade establishments amounted to 42·1 per cent. of all establishments, employing 10·5 per cent. of the total wage-earners (no hand-workers were enumerated other than those working in a shop); in 1910, no less than 61 per cent. of all establishments reported employed fewer than six wage-earners per establishment.²

Western Precedents for Eastern Industry.—If we look Westward we should draw from Eastern and Central Europe rather than England and America, with a free hand for precedents. Wherever there are agricultural holdings of an area inadequate to the support of a household there must be subsidiary outlets for the labour of the peasants. Along the coasts and on the islands of Europe the smallholders are fishermen; in populous districts they are sometimes traders. In every country of Europe they have practised handicrafts, and even now they or their womenfolk still knit, spin, weave, make lace, embroider, plait straw,

¹ Hobson: *Evolution of Modern Capitalism*, p. 115.

² Vide "Note on the Survival of Small-scale Industry" in Lloyd's *Cutlery Trades*.

make baskets and pots, work wood and leather. Even in the industrialised countries of Western Europe these rural industries are quite important and have received a great impetus from co-operative organisation and methods.¹ In France, for instance, it was estimated before the war that one-half of the population lived upon agriculture and one-third upon industry. Out of the total of 575,531 establishments 461,354, or four-fifths of the whole number, comprised not more than three employees, while the number of great establishments with more than 500 employees amounted to no more than 446. In Germany, the small-scale industry continues to employ about two-fifths of the entire industrial population, and embraces more than 90 per cent. of the industrial establishments. Similarly, in Denmark, in 1906, 79 per cent. of all establishments employed fewer than five workers. In Belgium, again, there were, in 1896, 165,000 establishments with solitary workers, and 54,000 establishments employing from one to four assistants only. We find that no less than 94 per cent. of all establishments employed fewer than five workers.

Rural Industries in Europe.—In Switzerland the happy union of rural industries with agricultural life is the secret of the prosperity of the people. That skilled part-time occupations are rendered possible in rural districts is illustrated sufficiently by the watch-making industry, and a close study of village activities in Switzerland reveals that the mind of the villager—although working slowly—works more sagely than many think. Excluding Geneva workers, there are nearly 25,000 watch-makers in rural districts, and 33,000 silk-weavers. A noteworthy feature of rural industries in Switzerland is that they have organised themselves on the commercial side into a trading corporation, with branches in the chief towns. In Czecho-Slovakia, every fifth person industrially em-

¹ Irvine: *The Making of Rural Europe*.

played is engaged in some small rural industry. In Bohemia, the harmony between rural industry and agriculture is more developed than elsewhere, although such industries as jewellery and glassware manufacture, as regards technical skill required, are not related directly to land occupations, as are basket-making, rural woodwork, etc. One of the most successful rural industries and one of the best organised is fancy jewellery and button work, which employs over 100,000 persons.

In Russia, Hungary and the Balkan countries, rural industries have a firmer hold than in Western Europe, and recently there has been witnessed an increase in skill and production. The Russian *kustars*, being productive co-operators in small industries, cater for them successfully. This is a movement far in advance of Western rural industrial development, where the need for sectional trade production has been less acute; and only now, for instance, have the ribbon-weavers of the Lower Rhine followed the example of the *kustars*.

Organisation of Small Industries in Germany.—This brings us to the difficult question of the organisation of small industries. The industrial history of rural Germany offers in this connexion most instructive data. In Germany the excessive divergence between urban and rural conditions was sought deliberately to be reduced by the economic policy of the State. Among the means adopted were:

(a) The judicious development of the nuclei of existing rural industries along educational, technical and commercial lines. Industries were classified under three heads: (1) Major Industry, which with its mechanical and capitalist organisation justified concentration in towns and centres of supply and transport; (2) Middle Industries, in which the machine processes and the human element roughly balanced; and (3) Minor Industries, comprising all handicrafts and home industries. A special machinery of organisa-

tion was set up for the development of rural industries. The policy of the Joint Board of Crafts through its Provincial Crafts and Home Industries Department was one of positive and conscious guidance, and set out to develop educational and training centres to supply commercial and technical information and on occasions to advocate changes of policy, whether in the adoption of new processes or new forms of industry. New rural industries were created in groups, such as Swiss watch-making in Saxony, pencil-making in Bavaria, etc.; and these have been maintained in a thriving state, thanks to the guidance, information and training facilities afforded. A very important feature of such industrial development has been the introduction of machine processes which come within the scope of economic small-power plants suitable for rural districts. Germany is much favoured in this respect by her extensive network of rural electricity supply; and even in isolated districts like Thuringia and Giant Mountains one finds cottage workers, in sheds or lean-to workrooms, operating small electric furnaces, drills, cutters, polishing machines, etc. Small collective workshops (sometimes combining to use one source of power) now have taken up many occupations which were not altogether suitable for the cottage. Thus home-work is left for light and congenial tasks only, where conditions are suitable. Besides such aids, the rural industries derived constant help and inspiration from especially created services of advice and commercial intelligence.

(b) But the encouragement of small industries in country districts has been part of a general constructive policy of assisting agriculture and of checking the rural exodus. Thus an attempt was made to regulate urban industries and to transfer them to the country in all cases where the costs of production were disproportionately high in the town, and where mechanical processes could be carried on equally well in rural

districts. Intensive cultivation of the land also was assisted and promoted by decasualising farm labour and by providing for slack seasons by means of small-holdings and rural industries. The economic position of smallholders, who in Germany farm about half of the land, was sought to be raised and secured by introducing suitable additional industrial occupations.¹ In all these ways the rural workers were attached to the land, and their powers of resistance increased during seasonal fluctuations and times of crisis. But, apart from the benefits to agriculture, the industry which was the national and economic foundation of the dominance of Germany, the conditions as between town and country were equalised in a much greater ratio than was done in other countries of the West. It is in this respect that the economic development in Germany took the opposite course to that of England. The former was a process of evolution, the latter of revolution: therefore the methods and organisation of the former are peculiarly instructive for us in the present economic transition.

Basis of Industrial Reconstruction in the East.—After the war, Europe is making feverish experiments in social democracy out of the ruins of capitalism, which has failed either to feed or house or employ properly the workers of the nations. In guild-socialist and syndicalist plans, in the farmers' and working men's councils, in co-operative societies, the political unit becomes the self-governing village or the self-directing industry, and democracy and government by majority are undergoing fundamental modifications. In the East, where social conditions favour industrial concentration much less than in Western Europe, an industrial structure based on small capital and co-operative management will represent a characteristic line of economic development. Thus we may look

¹ For a brief account of rural industries in Germany and their organisation, see Kny's *Report to Development Commissioners*, 1922.

forward to the reclamation of our waste lands under regional and co-operative rather than State or capitalistic management; water-power will be utilised in industry when with wise reclamation our streams become regular and continuous in their flow, and this will be collectively owned and operated, following the traditions of the Indian and the Chinese economic organisation, in which the power of the agricultural and industrial communities is still exercised regionally. Thence we can proceed to industries of many kinds under new co-operative conditions that are bound to react favourably on the slum conditions which now are fast developing round the coal-pits and industrial centres. On a basis of co-operative and regional control of industry we shall thus work, through the uplift of the country population, to a solution of the problem of modern industrialism.

Possibilities of Electrical Power in India.—Not only socialists but also many orthodox economists in the West are foretelling a complete decentralisation and ruralisation of industry due to the greater use of electricity as a motive-power in the future. They believe that the concentration of capital and machinery has been encouraged by the fact that in the case of steam-installation the cost per unit decreases as we increase its size. This is not the case with electric plant, though the absolute productiveness of electricity is greater than that of steam. Secondly, coal is heavier and bulkier than most raw materials; thus it has become cheaper in most cases to carry raw materials to the coal than to take the coal to the raw materials. Electricity, on the other hand, can be generated in bulk in central stations and distributed at relatively small cost over large areas. In 1919 the Coal Consumption Sub-Committee issued an interim report to the Ministry of Reconstruction proposing to supply all British industries with electric power. It has been settled con-

clusively during the past fifteen years that the most economical means of applying power to industry is through the electric motor. Among the advantages of the use of electric power in mills and factories are : (1) A reduction in the cost of the construction of buildings, which can be lighter owing to the fact that there is no need to install heavy lines of shafting and pulleys. (2) Hygienic conditions are improved owing to the diminution of dust and dirt ; better light owing to the absence of shafting, pulleys, etc. ; lessening of noise, etc. (3) Greater ease of placing different works in separate buildings and in locating them according to the daily requirements of the work, and without regard to the necessities of the motive power. It has been estimated that in India, under ordinary circumstances, neglecting abnormal periods, the continuous power is some 10,000,000 electrical horse-power ; while on what is known as " maximum development " the figure rises to 17,000,000 horse-power. Of this only 2 per cent. is now under development. Yet the coal resources are much smaller in India than in industrial countries in the West, and, under present conditions of exploitation, cannot last for more than sixty to seventy years. The chief water-power areas are nearly the whole of Burma ; the whole of northern India along the Himalayan range, comprising Assam, Northern Bengal, the United Provinces, the Panjab and probably the North-West Frontier ; the whole of the Western Ghats in Bombay, and down to the South of India ; and, on a smaller scale, Madras and the Central Provinces. In Mysore, the Siva Samudram Falls supply energy to the distant Kolar Gold Mines and the Gersoppa Falls will supply electricity for iron and steel works. Of the hydro-electric schemes in sight the more important are the Andhra Valley scheme, with estimated 68,000 electric horse-power, the mine scheme in northern Shan States, Burma, as well as another scheme in Sikkim.

Electricity for Rural Industries and Agriculture.

Not to speak of the great economic value of waterfalls, small streams, descending from great heights, ultimately may be an important source of energy available for domestic and industrial uses, for cottage and village production. The Panjab colony system already is utilising water-power, and, indeed, the electric use of canal-power will be more important in agriculture than in industries. This has been the case, for instance, in Germany. Without storage water-power will be wasted in the plains. With well-designed reservoirs in the plains the cheapness, handiness, and versatility of the implements to which electricity can be supplied may contribute to the maintenance of agriculture and industrial development in villages. In this it will co-operate with or perhaps supersede oil- and gas-engines, the existing stand-by of the small industry and workshop. It will be supplied also to work the lifts of the canals and for effective traction, and to factories near the canals, and thus will increase the tendency of well-appointed canals to check the intensive concentration of industry. Nor can we over-estimate the benefit of such schemes to irrigation work in India. Indeed, the Kannambadi Dam in Mysore and the Bhakri Dam in the Panjab, the Nila Mula scheme in the Western Ghats, and the Chhindwara scheme in the Central Provinces, as well as the Koyla Valley project, are full of potentialities not only to industries but also to agriculture in India. Something also may be expected from the co-ordinated use of multitudes of small, inexpensive windmills such as are met with in some of the Himalayan districts, and even from the sun's heat which conceivably may be turned to account so effectively as greatly to raise the economic strength of the tropical zones relatively to the temperate zones.

Hydro-electrical Development in the West.—In some of the agricultural countries in Europe hydro-electric

development is now proving a great aid to the development of agriculture and village industries.¹ Norway, Sweden, Italy and France have developed most water-power in Europe. Switzerland has developed the greatest percentage (80 per cent.) of its available power. There the power used by all the street railways and by the bulk of the industrial enterprises comes from the waterfalls. The railways are giving up coal and using hydro-electrical power. In France and Italy most of the hydro-electric energy developed is devoted to specific industries rather than to the rural districts, and in this they resemble the United States of America and Canada. The hydro-electric plant at the River Loire, for instance, supplies the power for silk-ribbon weaving, there being 35,000 cottage looms. The Edison Electric Company fits the special motor to the homestead loom at a cost of £15, or charges 8s. 6d. hire fee per month, and the output is increased by 25 per cent. In Italy, where conditions are suitable, irrigation works also are carried out in connexion with the large hydro-electric power-stations. Great progress has been made recently, and the country affords an interesting example of the important changes which may be the outcome of hydro-electric development on a large scale. But the most interesting of all the aspects of hydro-electric development is the possibilities which attend its application to agriculture and to life in rural areas. In Switzerland, the loom of the lace-maker and the machine of the watch-maker in the home are driven by hydro-electric energy. Such energy even goes into the farm and house of the peasant. Thus, grain is threshed, butter is churned, water is pumped, food for cattle is prepared and the farmer is relieved of his most arduous labour. Much of this development of water-power is due to the

¹ Captain H. M. Spink has reviewed these aspects of water-power development in a paper read to Section E (Geography) at the Hull meeting of the British Association.

policy of Government regulation and the payment of royalties to the State by the users of the water.¹ Electrical power, therefore, is doing much already to lighten the tasks and operations of agriculture. We have electrical milking machinery; the extension of the telephone into villages, so common in Norway; apparatus for hay-drying, for threshing, for chaff-cutting and churning. Will not the advent of electrical power through a highly-organised and widespread system of transmission be a great alleviation in country areas, especially in the rigorous climates of the Panjab and the N.W. Frontier Province? Indeed, is not this one of the means by which we are to arrest the steady drain of population from the rural districts?

Co-operative Electrical Power Supply in Sweden.—Sweden's water-power development is perhaps the most instructive for a study of the enormous economic and social possibilities which lie behind such developments. Power in Sweden is largely devoted to railway electrification (note especially the line from Riksgrausen-Ripats, 256 kilometres, and eventually between Narvik and Svarts, 500 kilometres), and to thermo-electrical smelting. But of peculiar interest is the great extension of electrical power to rural areas. Over 3,600,000 acres of farm land are supplied with electrical power. The distribution is extremely well organised. Co-operative Distribution Societies are formed by farmers and other small consumers. Each society signs a power contract with the Board of Waterfalls, and then resells the energy to its members on conditions fixed by the society. The capital needed for the erection of a local distribution system is obtained by the society taking up loans in saving banks and others. Usually such loans are repaid in twenty-five years. This method of financing local schemes frees members from making any large initial

¹ Huntington and Cushing: *Principles of Human Geography*, p. 148.

payment, and consequently does not hamper members who have to make an outlay on the electrical equipment of their own farms or shops.

Electricity in Rural Norway.—The *Review of Agriculture and Forestry in Norway*, 1921, states that the use of hydro-electric power in rural areas "renders possible a considerable extension of home (rural) industry, and thereby the utilisation of unoccupied labour during the slack periods of the year—a circumstance which may be of utmost importance in securing for farm workers steady employment during the whole year, thus binding them more closely to the soil by ensuring to them better economic conditions."

Italian "Sila Lakes" Scheme.—A similar idea, *i.e.*, the benefit to the rural population, lies behind the extensive "Sila Lakes" scheme of South Italy. The Sila is a tableland of 1,000 square kilometres in the province of Coseuza, drained by the rivers Neto, Arvo, Ampollina and others. It is proposed to convert the courses of the streams into a series of lakes by the construction of dams, and impound a head of water with a fall of 1,000 metres. Hydro-electric plant designed is for 160,000 horse-power capable of extension to 400,000 horse-power, which will supply power to Calabria and East Sicily.

Co-operative and Hydro-electrical Development for Rural India.—With our streams and waterfalls harnessed, and with the co-ordinated use of oil- and gas-engines and cheap windmills, we may not only witness a revival of cottage industries and communal workshops in which a multitude of artisans will work for the account of an entire village or guild under its law and protection, but also the system of decentralisation, *i.e.*, of autonomy and responsibility, in the big industry. Thus, we may have several villages with their semi-independent establishments in the riparian district, instead of one railway town with its congestion, house-famine and squalor; a village of coal

mines ; a village of smithies and rolling mills ; a village of steel work ; a village of mechanical construction, and so on, each with its separate and independent shops and quarters, and all the villages distributed over the whole region. Agriculture also may recover. With the system of relatively inexpensive light railways and motor-lorries connecting the fields with the markets for the finer fruits, flowers, poultry and other farm products, with a network of co-operative banks and agricultural supply and sale societies, with the multiplication of agricultural industries, dairying, distilling, oil and sugar manufacture, etc., we may yet see intensive and scientific, as distinguished from merely mechanical, cultivation in which agricultural work, machinery and other saving contrivances will not necessarily imply the disappearance of the small, independent farmer. Thus may be checked the converse process of industrialism, *viz.*, rural decline manifest in India in a growing proletariat, made up of agricultural labourers who are the majority ; industrial labourers who go off to work in jute, cotton and woollen mills ; and what are called half-and-half labourers—half agricultural, half industrial—working in the mills and plantations at certain periods, harvesting at others, going to mines when rainfall is deficient, to resume work in the fields when agricultural prospects are better.¹ It is thus by the improvement of technical conditions of small industries and intensive agriculture and of methods of organisation and marketing that have been so successful in lands of small farmers on the Continent that we can achieve a large measure of industrial success. The smaller nationalities rehabilitated in Europe by the war and its aftermath have set themselves in particular to achieve a new rural and technical efficiency different from the phases familiar enough in Western Europe, and freshly

¹ Cf. Hobson : *Evolution of Modern Capitalism*, p. 126.

epidemic in the new East. It is significant that the conditions connected with the use and distribution of electric power in industries are favourable to the economic development of villages and the maintenance of social traditions in the East. In India, we should rather adopt the arts of technical and mechanical efficiency in small establishments and methods of marketing as in France, as well as the grafting of processes of large co-operative business upon the small farming economy as in Belgium, Denmark, Switzerland and Germany. The conditions in these countries are more easily applicable to India, where the solidarity of the family and the joint farm and homestead, the fluid communalism and societal cohesiveness, as well as the peculiar habits of an ancient agrarian population, make us unfit, however we try, for utilisation of the full advantages of large and concentrative capitalism which inhere in countries of massive production like England and the United States.

INDEX

Aborigines, food of, 59
 Abundance, prized by man, 21
 Accident insurance, 143
 Accounts of the farm, 87-8
 Activities (table), 47, 48
 Agrarian legislation, 124
 Agricultural labour, contrasted conditions of, 139-40
 — labourer as peasant proprietor, 137
 — labourers in India, declining in number, 136-7; depressed, 138-40, 150
 — labours of women, 27, 31-2, 33, 126
 Agriculture, develops from hoe to plough, 55-6; Eastern intensive, 56-7, 80, 81-2; electrical aid, 204-5; German constructive policy for, 199-200; hours of labour, 142, 143; Western intensive, 57, 132
 — in India, co-operative reorganisation of, 128-31, 140, 163; hours of labour, 143; improvements for, 127-8, 132-3; indebtedness, 93, 118, 119, 124; intensive, 80, 81-2; leakages, 125-6; losses, 119-20; markets and marketing, 96-8; modern tendencies, 80-1; population pressure and, 80, 83-5; rotation, 81-2; scientific, 155, 207; seasonal, 126, 143, 155; time-saving in, 126
 Ahirs, 29
 Ahmedabad, 182, 189
 Ajmer-Merwara, 156
 Alms-giving, 46
 Amazon ants, 7
 America (see United States)
 American cattle-farming, 58; cotton, 105
 Andhra valley, 202
 Animals, insects and birds, functional differentiation among, 3-4; homing and migration, 5-6; social control, 7-8; social life, 1-3; utilisation, 4-5
 Antelopes, 7
 Anthropoids, 1
 Anti-malaria societies, 164
 Anti-lion, 18
 Ants, brain of, 19; class-differentiation, 8, 11; co-operative, 10-11, 22; division of labour, 26, 27; marauding, 1-2, 20; property sense, 21; provident, 10, 17; shepherd, 3, 10, 21; slave-holding, 7; tunnelling, 2
 Apes, social and economic life of, 1, 8; tool-using, 18, 19
 Arbitration societies in the Panjab, 164
 Argentine meat production, 58

Artisan societies in India, 153
 —, the Indian, 158
 Asansol mines, 184
 Ass, 55
 Assam, 38, 76, 122, 123, 156, 202;
 tea-gardens of, 113-6, 177, 182-3
 Association and evolution, 5, 6
 Australia, 177
 Austro-Hungarian Empire, 192
 Baboons, 1, 18
 Balance-sheets of Indian cultivators, 89-92
 Balkan peasants, 192; rural industries, 198
 Bamboo-workers, 28-9
 Banks, function of, 101; Indian, finance co-operative societies, 163
 Baroda, 136, 156; guilds, 168
 Barter, 94, 99-100
 Batai (rent-share), 78, 83
 Beavers, 2-3, 22, 23, 27
 Bees (hive), 4; class-differentiation of, 8, 11; co-operative economy, 10-11, 17; division of labour, 26, 27; petty larcenies, 20; punish robbers, 8, 44; social service, 22; social storage, 22-3
 Begar, fagging or forced labour, 87
 Belgian coal-mining, 183, 185; cottage industries, 156, 157, 197
 Benares, guilds of, 168
 Bengal, 31, 32, 38, 50, 59, 63, 78, 79, 85, 104, 121, 122, 123, 124, 127, 137, 138, 141, 142, 149, 150, 151, 156, 159, 163, 164, 178, 179, 181, 184, 185, 202
 Berar, 76, 122, 123
 Bhaiskara tenure, 77, 161
 Bhakri dam, 203
 "Big business," 98-9; peasants' rising against, 192-3
 Bihar, 31, 78, 138, 142, 163, 164, 185; and Orissa, 122, 123, 156, 183
 Biological adaptation, 153-4
 Birds, fishing, 1; hoarding, 2; migrating, 5-6, 7; nest-building, 4, 5, 22, 27
 Birth-rate, Indian, 49
 Birth-rates of physical and mental workers, 136
 Bisons, 26
 Boatmen, Indian, 159
 Bohemian rural industries, 198
 Bolshevik farms, 144, 146
 Bombay, 76, 78, 79, 97, 103, 108, 122, 123, 139, 149, 150, 160, 180, 182, 189, 202; drink problem in, 185-6
 Borneo, 36
 Brahmans, 32

- Brehm on monkeys, 1
 British coal-miner, 183; — industrialised farming, 142 (*see* England, English)
 Brunhes on socialising effects of irrigation and drainage, 74
 Budgets, knowledge of, needed in India, 52
 Buffalo, 87
 Bulgaria, limited landholding in, 144
 Burma, 36, 54, 76, 123, 139, 156, 158, 160, 202
 Calvert on waste of female labour in the Punjab, 32
 Camel, 17, 55
 Canada, 204
 Canal colonies, 74-5, 78-9, 81, 82, 121; water-power at, 203
 Canals and electricity, 203
 — of beavers, 3
 Capital, ideas of, evolved socially, 6; misused, 24-5; natural, 17; peasant's 86; right use of, 25
 Capitalistic industry advancing in India, 158; inequalities, 174; standardised society, 174
 Carver's table of activities, 47, 48
 Caste dinners, 52, 118, 122
 "Castes," animal, 11
 Cattle, 7-8; as money, 94; as power, 133; deteriorating, 126; Indian peasant's, 81, 86, 87, 131; lost through ignorance, 52; mortality among, 119-20, 126; on rice-fields, 41
 Cauvery delta, 121
 Cawnpore, 181
 Celtic homesteads, 70
 Central Provinces, 34, 78, 79, 122, 123, 203
 Ceylon, 139
 — Labour Commission, 148
 Chamars, functions and wages of, 87; rise of, 30; social and economic status of, 33-4
 Chenab-Jamrao colonies, 74, 78-9, 82 (*see* Canal colonies)
 Chhindwara scheme, 203
 Child mortality in India, 51
 Child-workers in Indian industries, 103, 178, 179-80, 182
 China, flesh and protein foods of, 63-4; industrialism in, 177
 Chinese agnatic rural clan, 131; family land system and village industries, 194; village and guild communalism, 195
 Chota Nagpur, 163
Chukra (sweeper), 87
 City attractions, 152; population problems, 150, 151; sites, determined by traffic or industry, 150-1; vices, fault of environment, 153-4
 Cityward drift in India, 149-50; remedy for, 155
 Civilisation and climate, 38-9
 — and environment (table), 42
 Climate and man, 36-7, 39, 41
 —, Indian mills not adapted to, 181
 Climatic energy, 41
 Cloth market in India, illustrates economic forces, 107-9; price curve of, 109
 Coal-miners, relative efficiency and wages of, 183
 Cochín, 50, 159
 Coconut oil, 61, 62
 Collectivist farms in Italy, 161-2; suitable for parts of India, 166
 Combination in business, 99
 Common interests and common customs, 77-8
 — rights in India, 69, 73; as bond of union, 77
 Communal workshops in India, 206
 Communalistic ideals of the East, 193
 Competition for land, 83
 Consumption (disease) among Japanese mill-girls, 177
 — (economic), social motives of, 11
 Cooking methods, 64
 Coolie, Assam, his nominal and real wages, 113-16
 Co-operation, hope for agriculturists in, 140; in cottage industries, 156, 157; indigenous, should be rehabilitated, 159-60, 163; large-scale, in Europe, 166-7; of ants and bees, 10-11; of primitive man, 9; promoted by rice-culture, 43; required in India to counteract capitalism, 158
 Co-operative abuses, 160
 — commonwealth for India, 169-70
 — credit, 121, 128, 160
 — farms in Italy, 161; introduced elsewhere and congenial to India, 166
 — labour in India, 159, 160, 163; in Italy and Russia, 159
 — solution of Italian land problem, 146
 Coorg, 76
 Corn as money, 94-5
 Coromandel coast, 59
 Cottage industries holding their own in Europe, 156-7; revival of, in India proposed, 155, 206
 — looms worked by electricity, 204
 Cotton markets, Deccan, 97-8; mills, comparative cost per spindle, 176; piece goods, imported, 108, 109
 Coubrough's Indian cloth prices, 109
 Country towns declining in India, 149-50, 151
 Craftsmanship of the East, 195
 Cranes, 7
Crèches at Indian mills, 186, 188
 Credit development and increased trade, 110-1
 Criminals in animal societies, 8
 Cropping, economics of, 82
 Crops, economic, 50, 56, 58; non-food, 80
 Curb on half-timers in Indian mills, 180
 Currency depreciation, 101; inflation, 111
 Czecho-Slovakian limit to land-owning, 144-5; organised land-workers, 142; rural industry, 197-8

Dal (split pea) in Indian dietary, 59, 63, 65
 Darling on the Panjab moneylender, 118
 Datta, K. L., on enhanced land value and easier credit in India, 120; on prices and wages, 112-14
 Death-rate, Indian, 49
 — of Japanese mill-girls, 176
 Debt slavery in India, 138-9, 147-8
 Deccan, 75, 85, 91, 92, 97-8; insolvent villages, 92-3; wheat-growing, 91-2
 Decentralisation of large industries in India, 206-7
 Deer, 7, 26
 Delhi, 156
 Demand and supply equilibrium, 107
 Denmark, 145, 157; small-scale industry in, 197
 Desert plants, 17
 Desires, right and wrong, 47
 Diet, essentials of good, 65
 — of Indians, deficient in proteid, 59, 60, 61; reasons for rice-eating, 61; specimen food budgets, 61-2; suggested improvements, 62-5
 Dietetic errors and disease, 64-5
 Diminishing returns, law of, 80
 Division of labour among ants and bees, 11, 26, 27; as basis of social order, 27-8; between sexes, 26, 27, 54; favours specialisation, 28
 Dog, 2, 3, 15
 Dom, 29
 Domestication of animals, 21
 Doshad, 29
 Drink consumption a test of industrial conditions—evidence of Bombay, 185-6
 Drummond on termites, 2
 Dublas, 139
 Durkheim on sexual division of labour, 27-8
 East Indies, 178
 Eastern group solidarity, 131
 Eating capacity limits animal progress, 20
 Economic goods, 44
 — ideas, evolved socially, 5, 6-7
 — life, from animal to man, 8-9
 — pressure, independent of population density, 84
 Edison Electric Company, 204
 Eggs, 62
 Egyptian Five Feddan Law, 131; intensive cultivation, 81-2
 Electrical power advantages, 201-2; favours decentralised industry, 201, 208; in German rural industries, 199; possibilities in India, 202; water storage for, 203
 Electricity applied to cottage industries, 199, 204
 Elephants, 7, 21, 27, 55
 Emigration, a cause and result of agricultural depression, 139; a relief to agricultural unemployment, 141, 142
 Energy, man's control of, 20
 —, social, and its distribution, 99

Energy utilisation and population, 57
 England, climate of, 41; industrialism and alcoholism in, 186; small-scale industry in, 195-6; thrift in, 121; town-dwelling population of, 149
 English agricultural labour unions, 143; Board of Agriculture on economic animal raising, 56; farmers and hired labour, 138; mill-workers, 176
 Environment, drawbacks of a too luxuriant, 36-7, 39; man conquering, 39-40
 Epidemic diseases in India, 49, 50, 51-2, 153, 184, 190
 Error and endeavour, 15
 Europe, Central and Eastern, still rural, 192; subsidiary industries of, 196-7
 European agricultural unemployment, 142; farming conditions compared with Indian, 143, 155; land reforms, 143-5; village community disintegrated by conquest and feudalism, 70-1
 Europe's lessons for the East, 193, 208; small nations aiming at a new efficiency, 207-8
 Exchange, the condition of specialisation, 29
 Expenditure as affected by poverty (diagram), 114
 Exploitation in rural India, 88, 97, 111-2, 138-9; natural, 20; of children in Indian factories, 179, 180; of women in Japanese mills, 175-8; only remedies for, 54; types of, 53-4; Western protective legislation ineffective in India, 47
 Expropriation of land in Europe and conditions of resettlement, 145
 Factory-hand's colourless life, 14
 Factories in India (1921), 103-5
 Families, specialisation of, 28
 Family, average working (Assam), 115
 — instinct thwarted by industrialism, 153
 Famine mortality, preventable, 52
 Farmer a producer, 35; aided by electricity, 204, 205; and industrialist, 172
 Farmers and farm-servants, relative numbers in India, 123, 137-8
 Farming methods, Eastern and Western, not interchangeable, 132
 Fatalism, 122
 Feasts and ceremonies, 118, 122, 179
 Feudal system of medieval Europe, 70-2
 Feudalism in India, 73
 Fiji, 148
 Financier, function of, 100
 Fire, man and, 15, 19
 Fish culture, 63; curing and preserving, 63; eating in India, 59, 153
 Fishing *arti* in Russia, castes in India, 159
 Fixed incomes and high prices, 112
 — wage earners in India, 135
 Flesh-eating in India, 59, 63, 153

- Floating immigrant labour in Indian cities, 150, 151; housing problem of, 150, 151, 153; lack adaptation to city conditions, 153
- Food-capital in nature, 17
- Food-expenditure of skilled factory labourers, 67
- Food-getting a bond of union, 10
- Food-producing powers of land (table), 134
- Food supply and sociability, 4; as motive for war, 44
- values (table), 66
- Fragmentation of holdings, 50, 122, 136, 138
- French agricultural conditions, 142; individual industry, 194; industrial example to the East, 194, 208; small and village industries, 156-7, 197; thrift, 121; town-dwelling population, 149; water-power, 204
- Fruit & wheat growing, 128
- Gadariyas, 29
- Galton on longevity of tame animals, 7-8
- Ganges valley population, 49
- Garden city settlements, 150
- Genius and country life, 154
- Geographical environment and its influence, 39; being conquered by man, 39-40
- German factory hours, 177; industrialised farming, 142; industrialism and alcoholism, 186; limits of land-owning, 144; organisation of small industries, 198-200; organised land-workers, 142; Raiffeisen agricultural co-operation, 160; small-scale industry, 197; thrift, 121; village industries, 156, 157; villager population, 192
- Germanic village communalism, 70
- Germany's power based on agriculture, 200
- Gersoppa falls, 202
- Ghosis, 29
- Giddings on interaction of town and country, 154
- Gifts for public purposes, 46
- Gold, 7, 55, 87
- Gold and silver money, 95
- Gonds, 78
- Government, financing of, 101
- rent, 79; tenants, 78-9
- Grain-dealer, Indian, 73, 88, 96-7, 111, 124, 182
- Grain prices in India, 109-10; ration, 65-6
- Great Britain, 177 (*see* British, England, English)
- Greece, 145
- "Green Rising" in Europe and its lessons, 192-3; unknown in peasant countries, 145
- Group motives, Eastern and Western, 194
- Guest-houses, 46, 73, 162, 169
- Guilds in India, communalistic and federal, 167-9, 195; in the West, class-ridden, 169, 195
- Gujars, 29, 32
- Hahn on Chinese agriculture, 56
- "Half-and-half" labourers in India, 207
- Half-timers in Indian mills, 179-80
- Hand agriculture, 132, 133
- , man's wonder-working, 19
- Handicrafts, revival of, a remedy for rural depopulation, 155; specialised by families, 28
- Hand-loom weaving in India, 108, 155-6, 158
- Hand-made linen revival in Germany, 157
- Harvest labour, 81; shares, 76, 78, 86
- Hawk, 44
- Hema Mala Union, 158
- Herd instinct in cities, 152
- "Higgling of the market," 106
- Himalayan range, 202; windmills, 203
- Hired labourers in India, 136, 138
- Hoarding instinct, 2
- Holdings of uneconomic size, a cause of poverty in India, 122-4, 136, 138
- Holiyas, 139
- Holland, cottage industries in, 156
- Home life, broken up by industrialism, 186
- Homing instinct, 5
- Hook-worm, 37, 153
- Hornet, 44
- Horse, 15, 20, 55
- Hours of labour in agriculture, 142, 143
- Hours of work, legal, in various countries, 177-8
- Household duties of Indian women, 32
- House-site, first landed property, 68; inalienable, 70
- Housing of city labourers, 150, 151, 153
- Hungarian agricultural unemployment, 142; land settlement, 144; rural industries, 198
- Hunting animals, 1, 4
- Hunting stage followed by pastoral, 55
- Huntingdon and Cushing on climatic energy, 41; on rice-culture, 41, 43; on vegetation and civilisation (table), 42
- Hyderabad, 156
- "Hydraulic communities," 74
- Hydro-electric works and irrigation, 203
- Income statistics, Indian, 117-8, 124
- India, communal traditions of, a basis for a co-operative commonwealth, 167-70; congenial exemplars for, in the West, 208
- Indian artistic craftsmanship, 195
- coal-miner, contract system of, 183; death benefit, 187; drink-bill, 184; efficiency, 183; hours, 178; housing, 183-4, 184-5; wages, 183, 184; working conditions, 184
- Factory Acts, 178, 179, 180
- factory life: day-nurseries, 186, 187; half-timers, 179-80; holidays not recognised, 179; hours, 178-9; lighting and ventilation, 181; maternity benefit, 187; meals and food shops, 181-2; mill-provided schools, 180, 188; multiple shifts, 179, 181; neglect of hygiene, safety, and comfort, 181; proportion of women to men, 187; wages, 182-3

Indian guild co-operation, 195
 — interlaced communalism, 167, 169
 — Mines Act, 178
 — mining industry, 185
 — peasant: accounts of, 87-9; benefited by high prices, 79, 111; capital, 86; economic condition, 92-3; expenditure, 118; exploiters, 88, 111-12; field labour, contrasted conditions of, 139-40; flight to the towns, 93; grain-dealer and, 111-12, 124; ignorant and indifferent to health, 49, 51-2; improvident, 52, 121-2; income, 117; indebtedness, 118; interest, 86-7; markets, 96-8; moneylender and, 118-19, 120, 124; problem of, 50-1; risk, 88; small farms, 122-4; specimen balance-sheets, 89-92; suggestions for educating, 52-3; supplementary industries needed, 128; wages, 87
 — unrest rooted in land hunger, 147
 — village collectivist finance, 162-3
 — communities disintegrated by landed and financial interests, 73, 128, 131; reconstruction proposals, 131
 — community spirit, signs of revival in, 163-4
 — functionaries and their allowances, 164-5
 — gods, provision for, 162, 165, 169; temple officials of, 165
 — in decline, 128; its desertion by the leisured class, 152; its rescue on co-operative lines, 128, 131
 Individualism a human characteristic, 21-2
 Indore, 181
 Industrial banks, 156
 — fatigue, 177; not investigated in India, 181
 — peace proposals in India, 190; urgency of, 191
 — reconstruction in the East, programme for, 200-1
 — Revolution and its havoc in West and East, 174-5
 Industrialisation beginning in India, 93
 Industrialism, enemy of rural life, 174; its fruit in the East, 175-7, 185, 186
 — not wholly victorious in the West, 192; overwhelmed by the "Green Rising," 192-3
 Industries, classification of, 198; primary and secondary, 44; specialisation in, 28
 Inequality, social, among animals, 7; among men, 21
 Influenza, 51-2
 Inheritance, Indian law of, 122
 Insects and their young, 23-4
 Instincts, human, famished in modern industry, 13
 Insurance against agricultural unemployment, 142; industrial, shared by agriculture, 143
 Integration of industries, 99
 Intensive cultivation, 56, 80, 81-2, 127-8
 Interdependence of nations increased by improved transport, 39-40

Interest, the peasant's, 86-7
 International credit, basis of, 101
 Invention, international, 40
 Irish co-operative farms, 166; Land Acts, 145
 Irrigation, co-operative, suggestion for, 163
 —, hydro-electric works and, 203, 204
 — in rice-growing, a communal bond, 70, 75
 —, Japanese, 121
 — societies, 163
 — works, owned in common, 69
 Irrigation-man (*nirghunti, madyan*), 163, 165
 Isolation of the villager, 172-3
 Italian agricultural unemployment, 142; co-operative and collectivist farms, 161-2; Co-operative and Collectivist Society solves peasant farming problem, 146; "Green Rising," 192-3; labour societies, 159; large-scale co-operation, 166-7; Northern organised land-workers, 142; regional agricultural co-operation, 171; rural syndicalism, 146; "Sila Lakes" scheme, 206; water-power, 204
 Jail dietaries in India, 65-7
 Japanese agricultural co-operation, 128-30; average farm, 122; climate, 41; cloths in India, 108; coal-mining, 183, 185; craftsmanship, 195; factory life, 175-7; hours of labour, 178; land passing to non-cultivators, 140-1; manure thrift, 126; multiple cropping, 127; rice-growing by hand, 132; rice-notes, 194; "safety first," 181; terraced rice-fields, 121; weakened communal bond, 195
 Jats, 29, 32
 Joint family, Hindu, and parasitism, 121-2
 — stock company, 100
 Jute Mill-hands' Union, Kankinara, 189
 Kala-azar, 37, 153
 Kankut, 83
 Kannambadi dam, 203
 Kashmir, 160
 Khots of Konkan, 78
 Kolar gold mines, 202
 Kolis, 139
 Koyla valley scheme, 203
 Kurmis, 29
 Labour as social service, 11, 15-16
 — competition in cities, 150, 151
 — problem, not solved by higher wages, 13; true solution indicated, 13, 15
 — wastage in Indian agriculture, 126, 128
 Lahore, 181
 Land improvements, 120-1
 —, letting of, preferred to hiring labour, 138
 —, *maniyam* or rent-free, allotted to Indian village functionaries, 164-5
 — monopoly in the West, 72

- Land nationalisation, 146
 — ownership in Europe : from feudalism to fee simple or leasehold, 70-2
 — in India, development of, 68, 78 ; redistribution of holdings, 69, 130-1, 161 ; strip system, 69 ; village communal, 76-8
 — regulations in Indian and South Asian villages, 69-70, 76-8
 — scarcity in India, 80
 — values risen in India, 120
 Landholding by non-cultivators, 124 ; peril of this movement, 140
 Landless labourer, bars agricultural progress, 133-4 ; derelict in India, 139, 190 ; familiar with co-operation, 159 ; hope for in co-operation, 140 ; increasing in number, 150 ; problem of, dangerous if unsolved, 140
 Landlordism in India, 78-9
 Large-scale co-operative enterprise in Europe, 166-7
 — industry, rise of, 98
 Law, limitations of, 45
 Leadership among animals, 7, 26
 Leake on *Burai*, 83
 Leather-workers, 28-9
 Legal changes, oppressive, in India, 120
 Leisure class deserts village for city, 152
 Light-makers, natural, 19
 Limited liability, 100
 Liquor-shops at Indian mining centres, 184
Literati, caste of, 30
 Living, new art of, 52-3
 Llama, 55
 Loans, kinds of, in India, 119 ; reasons for, 119-22
 Loire supplies power for cottage looms, 204
 Longevity of tame animals, 7-8
 Low Countries, 145
 Lucknow, 181
 McCay on rice diet, 60, 65-7
 Machine production inimical to freedom, 13, 14
 Madras, 76, 78, 122, 123, 137, 139, 156, 159, 160, 181, 189 ; agricultural income in, 117-8
 Madura, guilds of, 168
 Malabar, 59, 166
 Malaria, 37, 153
 Man, as tool-user, 18-19, 20 ; association factor in his evolution, 5, 6, 9 ; conventional, 11-12 ; early home life and division of labour, 27 ; property sense, 21 ; *wanderlust*, 6
 Manchester cloths in India, 108
 Mandalay Artists' Society, 158
 Mann and Kanitkar, economic inquiries of, 91-2
 Mann, Dr., on population pressure, 84
 Manu on land ownership, 68
 Manure, wasted or saved, 126
 Market value, 107
 —, weekly, in India, 96
 Marmots, 3, 7
 Marshall on regional industries in Europe, 193-4
 Mass-production v. individual constructiveness, 13-14
 Meat production, uneconomic, 58
 Mechanical power in European rural industries, 199, 204-5, 206 ; in Indian agriculture, 132, 133, 140, 200, 207
 Medical relief, 187
 Merchant in Europe, 72 ; in India, 95-6, 97
 Middle-class and high prices, 112 ; in cities, 151-2, 195 ; lacks adaptation to city habits, 153
 Middlemen, 73, 96-7, 157, 194
 Migration, 5-6
 Milk, butter and *ghee*, 60, 61, 62, 67
 — curd, 61, 62
 Mincopis, 5
 Mir land system of Russia, 69
 Mole, 19-20
 Money, inflation of, 110-11 ; kinds and uses of, 94-6, 99, 100-1, 110
 Moneylender, 88, 95, 111, 137 ; interest charged by, in Bombay, 186 ; most important profession in India, 118 ; terms generally, 118-19
 Monkeys, social life of, 1, 8-9 ; tool-users, 18
 Morality, beginnings of, 6
 Morgan on beavers, 3
 Motherhood, ideal of man, 27
 Muhammadans, 46
 Mukerjee, S. V., on agricultural population in Baroda, 136
 Mule, 55
 Multiple cropping, 127-8
 Mussalman women, 32
 Mysore, 202, 203
 National credit, 101-2
 — debt and its security, 101
 Natural powers transformed into wealth (table), 35-6
 Nature, increasingly controlled by man, 38-9, 39-40
 Negritos, 5
 Nests in common, 23
 New commerce in India, 73
 — landlordism in India, 73
 — scientific agriculture for India, 207
 Nicolai on earth's population-supporting capacity, 37-8 ; on tool-using animals and man, 19-20
 Nila Mula scheme, 203
 North-Western Frontier Provinces, 79, 84, 122, 123, 202, 205
 Norway, 177, 204 ; applies electricity to rural industry, 206
 Occupations largely employing women, 33
 Oil and gas engines in Indian farming and rural industry, 133, 156, 206
 Open-field cultivation, 60
 Oudh, 78 ; wheat-growing in, 90-1
 Ox, 15, 55

- Panchayat*, administrator and owner of village common property, 70, 73
- Panjab, 32, 34, 50, 74, 75, 78, 81, 84, 93, 118, 121, 122, 123, 124, 130, 142, 150, 164, 202, 203, 205
- Paravai village, Madura, finance of, 162-3
- Park and Burgess on irrigation and property in India, 74-5; on the centralised rural school, 172-3
- Parrots, 7
- Pastoral stage, evolved from hunting, 55
- Pauper animals, 8
- Peasant countries of Europe, 192
- proprietorship in India, 76; becoming peasant proletariat, 93, 147; non-cultivating, 124, 140
- Pelicans, 1
- Pencil-making, a rural industry, 199
- Plough, primitive, 125
- Poland, breaking up estates in, 144
- Polygars, 78
- Population, affected by standard of living, 49; agricultural, densities in Europe and India, 49, 50; cityward drift of, 149-50; floating immigrant, in cities, 150, 151
- , pressure of, diverts labour from land to industries, 140; extends cultivable area, 83-5, 110; raises prices, 80, 110
- Potato in India, 61, 63
- Poverty and expenditure (diagram), 114; and related problems, 124-5; in India, causes and remedies, 52-3
- Prairie dog, 3
- Predatory creatures, 4, 8, 20, 24
- Price, how determined, 106-7; normal, 107
- Prices, high, general causes of, 79-80; money and war causes, 110-11; who benefit and who suffer from, 111-12
- , rise of in India, 106; shown by cloth, 108-9; grain, 109-10, and tea, 116
- Production and exchange, 35
- Professional conscience developed by guilds, 171
- Profiteering in cloth and yarn, 108; in grain, 111-12
- Progress, indices of, 53
- Property ideas, growth of in India, 68
- , origin of, 6, 20-1
- Prostitution in collieries, 184
- Proteid, deficient in Indian diet, 59; not well digested by rice-eaters, 59-60; poverty of rice in, 60
- Psychological factor in human progress, 38-9
- Public opinion, more effective than law, 45; rules responsibility of wealth in India, 45-7
- Puleyas, 139
- Puri, 159
- Raiffeisen system of agricultural co-operation, 160
- Railway electrification in Sweden, 205
- Railwaymen's Union, Bareilly, 189
- Railways and prices, 79; and rivers, 150-1
- Rajputana, 136
- Rajputs, 29, 32
- Rat, loss caused by, 126
- Ratnagiri, 185
- Raw materials, Indian dealer in, 96
- Regional Agricultural Demesne, 171
- reconstruction, a solution for India, 171-2
- Regionalism characteristic in India, 170; proposed regional expansion of guilds and co-operative bodies, 170; the example of Italy, 170-1; the ground-work of guild and caste, 171
- Rent in India, 76, 78-9; determination of, 79; high, how caused, 79-80, 83; in kind, superseded by cash payment, 72; income from, 124; receivers of, increasing in number, 136-7
- Retailer, Indian village, 96, 97
- Revenue demands in India, 119
- Rho on racial element in diet, 60
- Rice, cooked and steamed, 67
- culture an aid to civilisation, 47, 43; promotes co-operative life, 43
- dust (*kura*), 67
- eating, economics of, 67; physiological effects of, 59-60; results of recent research, 65-7
- grower's balance-sheet, 89-90
- growing, hand-work in, 132
- notes in Japan, 94
- , polished and unpolished, 60
- River and railway in India, 150-1
- Rivers and civilisation, 37-8
- Robber bees and wasps, 8, 44
- Robbery preferred to work, 20; produces nothing, 44
- Rodents, 19
- Rors, 32
- Ross on exploitation, 54
- Rotation of crops in India, 81-2
- Roth on occupations of primitive women, 32
- Roumanian co-operative farms, 166; land expropriation, 144
- Rupee, decline of, 117-18
- Rural communalism in India, signs of revival, 163-4
- decline in India, constructive proposals for checking, 206-7
- exodus, 142; dangers of in India, 155; German policy to arrest, 198-200
- industries in Europe, 196-8; organisation of by Germany, 198-200
- one-room district school, 172-3
- syndicalism, 146
- Russell Smith on uneconomic food production, 58
- Russian *artels*, 159; "Green Rising," 192; *kustars*, 198; *mir* land system, 69; peasant population, 192; repudiation of debt, 101; rural industries, 198; seizure of land by peasants 143-4
- Ryotwari tenure, 76, 79, 123
- "Safety first" campaign, 181
- Saharanpur rules, 79

- Sand-beds (*chars*), 38
 Scandinavia, 145
 Scavenger castes, 29-30; tribes, 28-9
 Science and the revival of village life, 155; international, 40; misuse of, 24
 Scottish land reforms, 145
 Scouts, animal, 7
 Seed, improved, and its possibilities in India (diagram), 125
 Semple on geographical environment, 39, 40-1
 Sentinels, animal, 7, 26
 Serbia, 166
 Serfdom of depressed castes, 139
 Serfs of South India, 147-8
 Services as economic goods, 45
 Servile castes, 30-1; tribes, 29-30
 Sex separation under industrialism, 153
 Sexes, relative proportions of, in Indian industry, 187
 Sharing the harvest, 76, 78, 86
 Sheep, 15, 55, 87, 94
 Sholapur, 182
 Siberia, 159
 Sikhs, 32
 Sikkim, 202
 "Sila Lakes" scheme, 206
 Simon on French *petit culture*, 56
 Sind, 74, 75, 76, 186
 Siva Samudram falls, 202
 Slater on *padials*, 147-8
 Slave agriculture of Greece and Rome, 70
 Slave-holding ants, 7
 Sleeping sickness, 37
 Sium life and moral deterioration, 151, 153-4
 Small businesses in lands of large scale production (diagram), 157
 Smallholders and handicrafts in Europe, 196-7; German care for, 200
 Small holding as base for hired labourer, 146-7, 190
 Social consumption more characteristic of animals than of man, 21-2
 — democratic experiments in Europe, 200
 — etiquette and occupations of Indian women, 31-3
 — extravagance in India, 52, 118, 122
 — habits, advantageous to animals, 8
 — inheritance, 29-30
 — life, object of man's work, 11-12
 — service, a lesson from the animal kingdom, 11, 15-16, 22
 — storing evolved from domestic storing, 22-3
 — values and class formation, 30; shifting of, 30-1
 Socialist criticism of capitalism, 174
 South Indian coast, 50
 Space and time, conquest of, 39
 Spain, 142; irrigation and solidarity in, 74; organised land-workers, 142; rural syndicalism, 146
 Specialisation, occupational, 28-9; made possible by exchange, 29
 —, physiological, 26
 —, world-wide, 98-9
 Species knowledge, 5
 Spiders, 4, 18
 Spinners' and Weavers' Unions in India, 189
 Squirrels, 2, 27
 Standard of living as affecting population, 49; how raised in agricultural districts, 50
 Starchy diet, evils of, 60, 63, 64
 State-improved land and its tenure, 74
 Steam-power favours concentrated industry, 201
 Stock exchange, 100
 Storing instinct, feeble in man, 23
 Straits Settlements, 139
 Strikes in India, unsystematic but lasting, 188-9, 190
 Strip system of land ownership, 69; consolidation of, 129-31
 Subdivision of holdings, 50, 122, 131, 136, 138
 Sun's heat, use of, 203
 Supply and Demand, twin elementals, 102
 Survivals of early cultural phases, 28-9
 Sweden, 145, 204; co-operative electrical supply in, 205-6
 Swiss cottage industries, 156; hydro-electrical power used in farm and cottage, 204; small-scale industry and trading, 197; State-regulated water-power, 204-5
 Sylhet tea-gardens, 182
 Tagas, 32
 Talari, 29
 Tea-gardens, Assam, labour and wages in, 113-16, 177, 182-3; Sylhet, 182
 Tea industry depressed by world-wide changes, 116, 183
 Telephone in the village, 205
 Temperate regions favourable to man, 37, 39
 Temples, 46, 73
 Termites, tunnels of, 2
 Terracing hillsides, 131
 Thomson on beavers, 3; on bird migration, 6; on storing instinct, 23
 Thrift, a Western virtue needed in India, 121
 Thrush, 18
 Tiger, 19
 Time idea, 5
 Tokyo mills, 176-7
 Toleration and its development, 6
 Tool, man's first, 14
 Tools, 5, 6, 13; as capital, 17-18; misuse of, 24; of animals, 18, 19, 20; of man, 19, 20
Totem relationship, 77
 Toti, 29
 Town and country conditions, German attempt to equalise, 198-200
 — populations related to business activity, 149-50
 Towns, rise of in Europe, and their economic reactions, 71
 Trade union movement in India, 189, 190
 Trading class benefited by high prices, 112

- Transport as affecting price, 110 ; improved, influence of, 39-40
- Travancore, 50, 166
- Tree-felling by beavers, 2, 3
- Trichinopoly, rice-growing in, 89-90
- Tropical diseases, 37
- Tropics, adverse to civilisation, 36, 39 ; exploitation of, 40
- Tuticorin, 159
- United Provinces, 34, 63, 75, 78, 84, 115-16, 122, 123, 137, 138, 141, 142, 160, 202
 - States, average farm in, 122 ; factory hours, 178, 179, 195-6 ; hydro-electricity, 204 ; small businesses, 157
- Unrest in India, its cause and cure, 147
- Urban industries transferred to country, 199-200
- Urbanisation, 149, 155 ; incomplete in Europe, 192
- Utilisation among animals, 4-5
- Vegetable diet and economical use of land, 58
 - ration in India, 67
- Vegetables, leafy, eaten in India, 60-1
- Vegetation and civilisation (table), 42
- Vendetta, 77
- Village-building of termites, 2
- Village community, Indian, 76-8 (*See* Indian village)
- Villages, insolvent, 92
- Villeins, feudal tenants, 71 ; liberated by cash rental, 72
- Vitamines, absent from polished rice, 60 ; foods containing, 60-1, 64 ; necessary to health, 64-5
- Wage-earners and high prices, 112, 115, 116
 - , fixed, in India, 135-6
- Wages, agricultural, 81, 87 ; in kind, superseded by cash, 71 ; "nominal" and "real," 112-14 ; "nominal" rises faster than "real," 113, 115
 - , low, real hardship of, 11 ; labour problem not solved by raising them, 13
- Wanderlust*, 6 ; conquered by Eastern peoples, 57
- War and cloth, 108-9
- Wars, origin of, 44
- Wasps, 8, 18, 22, 44
- Watchmaking a rural industry, 197, 199, 204
- Water-power, proposed collective use of in the East, 201 ; sources of in India, 202
- Waterways still important in India, 150
- Wealth as affecting price, 106-7 ; distribution of, how judged, 135 ; duties of, 45-7
- Wealth-getting, ways of (table), 48
- Weaving, hand-loom, depressed by machine competition, 108 ; holding its own in India, 155-6 ; in Germany, 157
- Welfare of peasants in India, 52-3
 - work, economic value of, 188
- Western Ghats, 202, 203
 - models for India, 208
 - specialisation in manufactures, 98-9
- Wheat-eaters of Northern India, 59, 60
- Wheat-growers' balance-sheets, 90-2
- Wholesaler of finished goods, 96, 97
- Windmills, small, 203, 206
- Wolves, 1, 2, 7, 27
- Woman, primitive, centre of family and home, 27 ; first in art and industry, 13, 27, 55 ; occupations of, 31
- Women in Indian factories and mines, 105, 178, 179, 181, 182, 186-7 ; in Indian outdoor industry, 126 ; in Japanese mills, 175-7, 178
- Women's work in Bengal, 32 ; Bihar, 31-2 ; Burma, 54 ; Europe, 196-7 ; Panjab, 32 ; Southern China, 54
- Woodruff on economic food production, 58
- Wool-sorters, skilled and unskilled, 176
- Work among animals, 11, 14 ; irksome conditions of, 12, 13, 14 ; motive for, 11-12
- Workmanship, instinct of, 12-13 ; thwarted by modern industrial system, 13, 15
- Workmen's Compensation Act (India), 188
- Workshop system in Eastern cities, 195
- World-economy, future co-ordination of, 102-3
- World's economic system, self-acting, 102
- Yeast as food, 61
- Young, social care of, among insects, 22 ; storage for, 23-4
- Yugo-Slavia, land property limit in, 144
- Zakat*, 46
- Zamindari* holdings in Bihar, 123

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